Rack Conveyor Dishwasher

Installation/Operation Manual with Service Replacement Parts

Single Tank Model
CH-44, MD-44, I-44

Single Tank w/Prewash
Model CH-66, MD-66, I-66

Rack Conveyor Dishwasher

CH-44, MD-44
44" Single Tank with built-in electric booster

CH-66, MD-66
44" Single Tank with 22" Prewash
with built-in electric booster

International Models

I-44
44" Single Tank with built-in electric booster

I-66
44" Single Tank with 22" Prewash
with built-in electric booster

Dishwasher serial no.

www.championindustries.com

Issue Date: 8.7.14

Manual P/N 115279 rev. B

For machines beginning with S/N RM13020073 and above

3765 Champion Boulevard
Winston-Salem, NC 27105
336/661-1556 Fax: 336/661-1660
Toll-free: 800.858.4477

2674 N. Service Road, Jordan Station
Ontario, Canada L0R 1S0
905/562-4195 Fax: 905/562-4618
Toll-free: 800.263.5798

Printed in USA

For future reference, record your dishwasher information in the box below.

Model Number_____ Serial Number_____

Voltage_____Hertz_____ Phase_____

Champion Service Agent _____ Tel:_____

Champion Parts Distributor _____ Tel:_____

National Service Department

In Canada:
Toll-free: 800/ 263-5798
Tel: 905/ 562-4195
Fax: 905/ 562-4618
email: service@moyerdiebellimited.com

In the USA:
Toll-free: 800/ 858-4477
Tel: 336/ 661-1992
Fax: 336/ 661-1660
email: service@championindustries.com

ATTENTION:

The dishwasher model number, serial number, voltage, hertz and phase are needed to identify your machine and to answer questions.
Please have this information on-hand if you call for service assistance.

For all models:

The data plate mounts to one side of the top-mounted control cabinet.

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REGISTER YOUR PRODUCT ONLINE

Make sure you are connected to the internet, then enter the address below:

IN THE USA

CHAMPION
http://www.championindustries.com/register

MOYER DIEBEL
http://www.moyerdiebel.com/register

IN CANADA

CHAMPION AND MOYER DIEBEL
http://www.championindustries.com/canada/register

PRODUCT REGISTRATION BY FAX

COMPLETE THIS FORM AND FAX TO:

(336) 661-1660 in the USA

1-(800) 204-0109 in Canada

PRODUCT REGISTRATION CARD

Model	Serial #

Date of Installation: ___/___ /____

Company Name: _____

Address: _____ _____ _____
(Street) *Province* *Postal Code*

Telephone #: ( ) _____ --- _____

Contact: _____

Installation Company: _____

Address: _____

Telephone #: _____

Contact: _____

FAILURE TO REGISTER YOUR PRODUCT MAY VOID YOUR WARRANTY

IMPORTANT IMPORTANT

Revision History

A revision might be a part number change, new instructions, or information that was not available at print time. We reserve the right to make changes to this manual without notice and without incurring any liability by making the changes. Dishwasher owners may request a revised manual, at no charge, by calling (800) 858-4477 in the USA or (800) 263-5798 in Canada.

Revision Date	Revised Pages	Serial Number Effectivity	Description
4.1.13	*All*	*RM13020073*	*Released First Edition*
6.23.14	*40-41*	*All*	*Added International tank heater elements*
	58-59	*All*	*Reversed items 11 and 13*
	62-63	*All*	*Added International motors*
	68-69	*All*	*Added international booster heater elements*
	70-71	*All*	*Added 27kW 200-220/50-60/1 booster*
8.12.14	*51, 53*	*All*	*Changed upper manifold part numbers*

LIMITED WARRANTY

Champion Industries and The Companies (The Companies), 3765 Champion Boulevard, Winston-Salem, North Carolina 27105, and P.O. Box 301, 2674 N. Service Road, Jordan Station, Canada, L0R 1S0, warrants machines, and parts, as set out below.

Warranty of Machines: The Companies warrant all new machines of its manufacture bearing the name "The Companies" and installed within the United States and Canada to be free from defects in material and workmanship for a period of one (1) year after the date of installation or fifteen (15) months after the date of shipment by The Companies, whichever occurs first. [See below for special provisions relating to glasswashers.] Warranty registration must be submitted to Champion within ten (10) days after installation either online on the Champion Industries website (http://www.championindustries.com/register) in the USA or http://www.championindustries.com/canada/register in Canada or by fax on the form provided at the front of this manual. If warranty registration is not returned within such period, the warranty will expire after one year from the date of shipment.The Companies will not assume any responsibility for extra costs for installation in any area where there are jurisdictional problems with local trades or unions.

If a defect in workmanship or material is found to exist within the warranty period, The Companies, at its election, will either repair or replace the defective machine or accept return of the machine for full credit; provided; however, as to glasswashers, The Companies' obligation with respect to labor associated with any repairs shall end (a) 120 days after shipment, or (b) 90 days after installation, whichever occurs first. In the event that The Companies elect to repair, the labor and work to be performed in connection with the warranty shall be done during regular working hours by The Companies' authorized service technician. Defective parts become the property of The Companies. Use of replacement parts not authorized by The Companies will relieve The Companies of all further liability in connection with its warranty. In no event will The Companies' warranty obligation exceed The Companies' charge for the machine.

The following are not covered by The Companies'' warranty:

a. Lighting of gas pilots or burners.
b. Cleaning of gas lines.
c. Replacement of fuses or resetting of overload breakers.
d. Adjustment of thermostats.
e. Adjustment of clutches.
f. Opening or closing of utility supply valves or switching of electrical supply current.
g. Cleaning of valves, strainers, screens, nozzles, or spray pipes.
h. Performance of regular maintenance and cleaning as outlined in operator's guide.
i. Damages resulting from water conditions, accidents, alterations, improper use, abuse, tampering, improper installation, or failure to follow maintenance and operation procedures.
j. Wear on Pulper cutter blocks, pulse vanes, and auger brush.

Examples of the defects not covered by warranty include, but are not limited to: (1) Damage to the exterior or interior finish as a result of the above, (2) Use with utility service other than that designated on the rating plate, (3) Improper connection to utility service, (4) Inadequate or excessive water pressure, (5) Corrosion from chemicals dispensed in excess of recommended concentrations, (6) Failure of electrical components due to connection of chemical dispensing equipment installed by others, (7) Leaks or damage resulting from such leaks caused by the installer, including those at machine table connections or by connection of chemical dispensing equipment installed by others, (8) Failure to comply with local building codes, (9) Damage caused by labor dispute.

Warranty of Parts: The Companies warrant all new machine parts produced or authorized by The Companies to be free from defects in material and workmanship for a period of 90 days from date of invoice. If any defect in material and workmanship is found to exist within the warranty period The Companies will replace the defective part without charge.

DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY. THE COMPANIES' WARRANTY IS ONLY TO THE EXTENT REFLECTED ABOVE. THE COMPANIES MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED, TO ANY WARRANTY OF MERCHANTABILITY, OR FITNESS OF PURPOSE. THE COMPANIES SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE REMEDIES SET OUT ABOVE ARE THE EXCLUSIVE REMEDIES FOR ANY DEFECTS FOUND TO EXIST IN THE COMPANIES DISHWASHING MACHINES AND THE COMPANIES PARTS, AND ALL OTHER REMEDIES ARE EXCLUDED, INCLUDING ANY LIABILITY FOR INCIDENTALS OR CONSEQUENTIAL DAMAGES.

The Companies do not authorize any other person, including persons who deal in The Companies' dishwashing machines to change this warranty or create any other obligation in connection with The Companies' Dishwashing Machines.

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Model Descriptions

Models CH-44 and MD-44
Electric high temperature single tank rack conveyor dishwasher with a built-in electric booster in 40°F/22°C rise or optional 70°F/39°C rise. This model's direction of operation is convertible in the field.

Models CH-66 and MD-66
Electric high temperature single tank with prewash tank rack conveyor dishwasher with a built-in electric booster in 40°F/22°C rise or optional 70°F/39°C rise.

Models I-44 and I-66
Electric high temperature single tank and single tank with prewash tank rack conveyor dishwasher with a built-in electric booster in 40°F/22°C rise or optional 70°F/39°C rise. Voltages in 50 Hz.

The installation of your dishwasher must be performed by qualified electricians, and plumbers and serviced by authorized service technicians trained in commercial dishwashers.

Defects and repairs caused by unauthorized installers will not be covered by the dishwasher warranty.

Receiving

1. Inspect the outside of the dishwasher carton for signs of damage.
2. Remove the carton and inspect the dishwasher for damage.
3. Check for any options or accessories that may have shipped with your dishwasher.
4. **Turn to the front of this manual and follow the instructions to register your product online or by fax.**

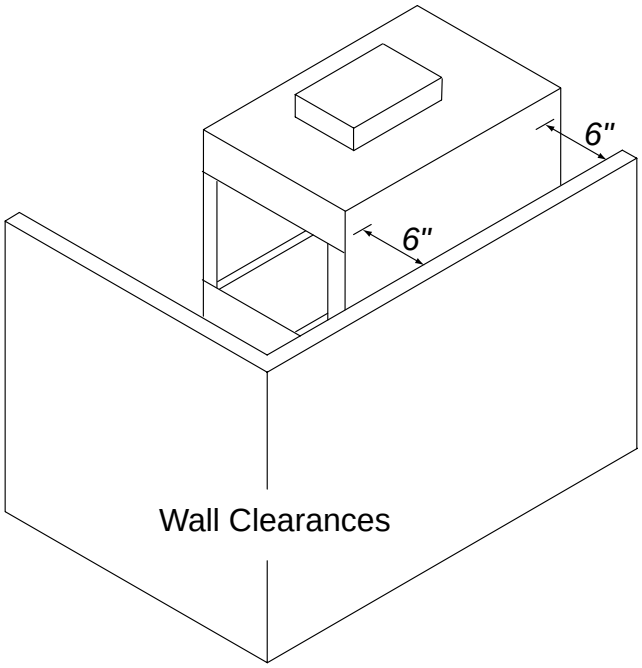
NOTE:
The installation of your dishwasher must be performed by qualified service personnel. Problems due to improper installation are not covered by the Warranty.

NOTE:
The installation of the dishwasher must comply with all local electrical, plumbing, health and safety codes or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1; and the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96.

!!ATTENTION!!

Use caution when moving or lifting the dishwasher to prevent damaging the dishwasher or the installation site. Check doorway and passageway clearance before moving the dishwasher. Remove dishwasher front panels and check under the machine base for obstructions before moving.

1. Inspect the dishwasher for shipping damage.
2. Check the dishwasher interior for curtains, panels and other supplies.
3. Lift the dishwasher off the shipping pallet and move the machine near its permanent location.
4. Leave a minimum of 6" between walls and the rear of the dishwasher.
5. Level the dishwasher side-to-side and front-to-back using a bubble level. The dishwasher legs are adjusted by screwing them in or out.
6. Do not remove tags attached to the utility connections.
7. Remove the protective film from the dishwasher exterior.
8. Remove any foreign material from the dishwasher interior.



Wall Clearances

Utilities

Hot Water Connections

NOTE:
Only qualified personnel should make dishwasher plumbing connections.
Connections must meet local plumbing and sanitary codes.
Improper installation is not covered be the dishwasher warranty.

Hot Water Requirements:

1. Connect a 3/4" NPT hot water supply line to the line strainer located at the top rear of the dishwasher. A water hardness of 3 grains/gal (US) [51.3 mg/L] or less is recommended.
2. For a dishwasher without a booster heater, the hot water connection must supply a minimum of 180°F/82°C measured at the dishwasher.
3. For a 40°F/22°C rise booster heater, the hot water connection must supply a minimum of 140°F/60°C measured at the dishwasher.
4. For a 70°F/39°C rise booster heater, the hot water connection must supply a minimum of 110°F/43°C measured at the dishwasher.
5. Install a pressure regulating valve (PRV) before the dishwasher supply connection to maintain a flowing pressure of 20-25 PSI/137.8-172.4 kPa.
6. Install a service shut-off valve in the supply line, as close to the dishwasher as possible. The size of the valve must be the same size or larger as the supply line.

Cold Water Connections

Cold Water Requirements:

1. Connect a 1/2" NPT cold water supply line for a dishwasher equipped with a prewash cold water tempering option. Connection is located at the top of rear of the dishwasher load end. A water hardness of 3 grains/gal (US) [51.3 mg/L] or less is recommended.

2. Connect a 1/2" NPT cold water supply line for dishwashers required to have a drain water temperature tempering option. A water hardness of 3 grains/gal (US) [51.3 mg/L] or less is recommended. Request a P/N 452891 for a drain tempering water kit.

Drain Connections

1. The 1-1/2" drain line was removed and packed inside the dishwasher prior to shipping. Install the drain line once the dishwasher has been placed in its final location.
2. Connect the 1-1/2" NPT drain line to above a drain sink or to a 1-1/2" or larger drain line connection.
3. Observe all local plumbing and sanitary codes when installing.

Ventilation Connections

1. DO NOT VENT THE DISHWASHER INTO WALLS, CEILINGS OR ENCLOSED PLACES.
2. Vent stacks with adjustable dampers are supplied with the dishwasher to connect house vent.
3. Connect stainless steel water-tight duct inside the 4" x 16"/ 106mm x 407mm vent stacks supplied with the dishwasher.
4. A minimum of 6 air changes per hour of kitchen is recommended

Ventilation Guidelines:

Dishwasher without a prewash tank option:
Load end- 200 CFM @ 1/4" SP/ 95 Liters/second
Unload end- 400 CFM @ 1/4" SP/ 189 Liters/second

Dishwasher with a Prewash tank option:
Load end- 150 CFM @ 1/4" SP/ 95 Liters/second
Unload end- 400 CFM @ 1/4" SP/ 189 Liters/second

Electrical Connections

WARNING:
Electrocution or serious injury may result when working on an energized circuit.

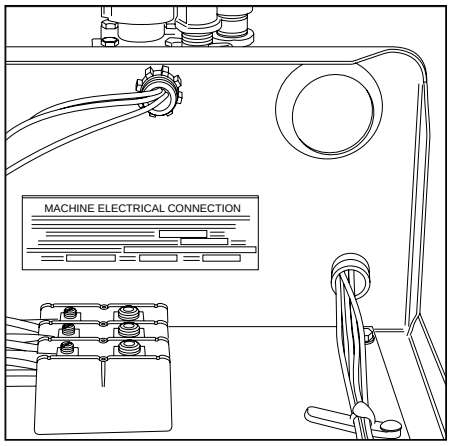
Disconnect power at the main breaker or service disconnect switch before working on the circuit.

Lock-out and tag the breaker to indicate that work is being performed on the circuit.

ATTENTION
A qualified electrician must connect the main incoming power to the dishwasher in accordance with all local codes and regulations or in the absence of local codes in accordance with the National Electrical Code.

!!ATTENTION!!
Electrical and grounding connections must comply with the National Electrical Code or in the absence of a National Code then all Local Electrical Codes.

A qualified electrician **MUST** compare the electrical power supply with the machine electrical specifications stamped on the MACHINE ELECTRICAL CONNECTION PLATE located inside the control cabinet before connecting the main power to the dishwasher.

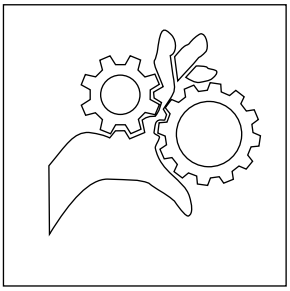


1. The main incoming power to the dishwasher is made at the top of machine in the control cabinet.
2. The electrician must connect the incoming power based on the information that is stamped on the Machine Electrical Connection Plate.
3. Any change to the Machine Electrical Connection Plate must be approved by the factory in advance.
4. The dishwasher main power terminal block is located inside the top-mounted control cabinet.
5. A knock-out plug is provided at the rear of the control cabinet for electrical service connections.
6. Electric blower-dryers have a separate main power connection.

Electrical Connections (continued)

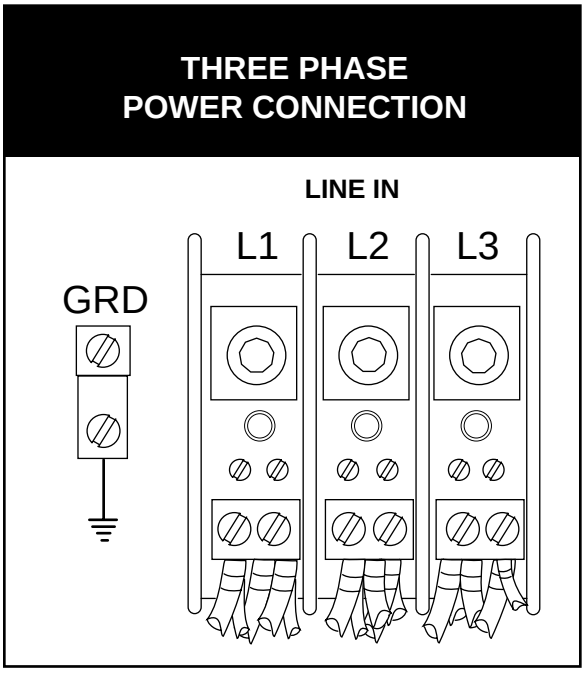
Motor Rotation

1. Motor rotation was set at the factory.
2. The conveyor drive motor rotation is indicated by a red arrow located on the side of the motor.
3. Check if all motors are running in the wrong direction.
4. Reverse the L1 and L2 wires on the output side of the dishwasher Main Terminal Block (MTB) located inside the top-mounted control cabinet.
5. The photograph below shows the conveyor drive motor with its direction arrow.
6. A wash pump/motor assembly can be seen in the background of the photo.

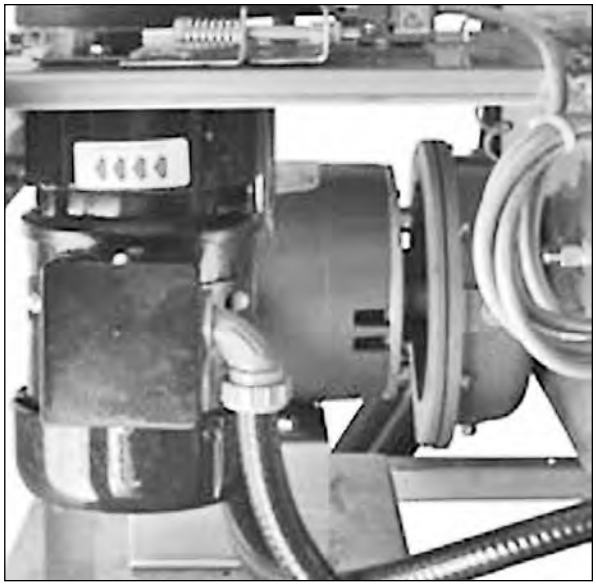


WARNING:
Moving Conveyor Parts may cause INJURY OR DEATH.
Keep hands and clothing clear of the conveyor when the conveyor is moving.

USE EXTREME CAUTION WHEN THE CONVEYOR IS MOVING.



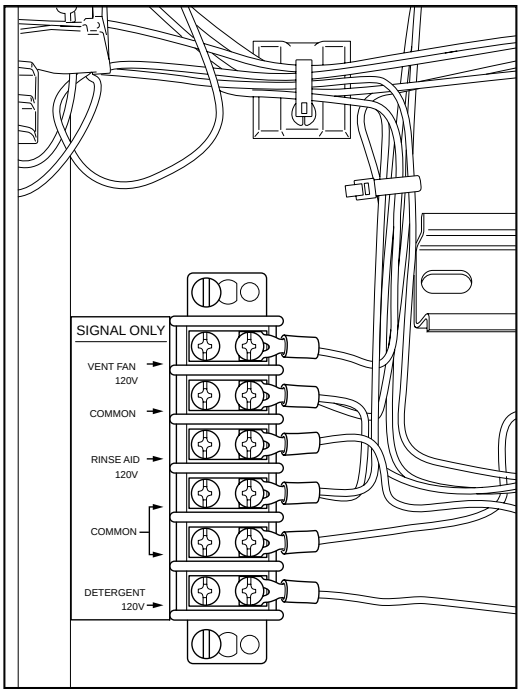
Main Terminal Block Inside the Top-mounted Control Cabinet.



Motor Direction Rotation Label on Motor Frame.

Chemical Signal Connections

1. Use a qualified detergent/chemical supplier for detergent/chemical and dispensing equipment needs.
2. Labeled detergent control circuit connection terminals are provided in the control cabinet for detergent and rinse agent/sanitizer dispensing equipment (supplied by others).
3. The illustration at right, shows the terminal board for the machine.
4. The signal connection points include:
   - Detergent signal 120VAC, 1A max load.
   - Rinse aid/Sanitizer signal 120VAC, 1A load.
5. A removable black plug is provided in the load end side of the wash tank for installation of the detergent conductivity cell.



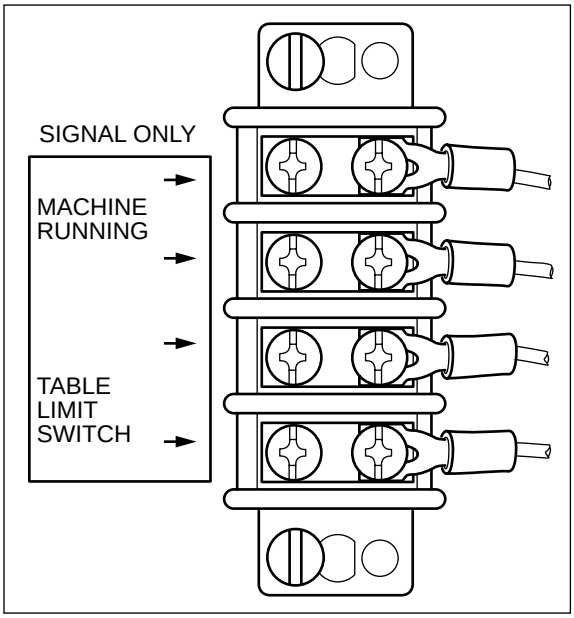
Vent Fan Signal Connection

NOTE:
The Vent Fan Signal Connection supplies 120VAC to a control relay (supplied by others) when the dishwasher is ON and O VAC when the dishwasher is OFF. Power to operate the vent fan (supplied by others) must be supplied separately.

1. The Vent Fan signal connection point is located on the same terminal board as the chemical connections (see illustration above). The connection is:
   - Vent Fan 120VAC, 1Amp max amp load

Running Signal and Table Limit Switch Connections

1. Connections are provided for systems that require a signal to indicate the dishwasher is running.
2. A signal connection is provided to indicate that the dishwasher has stopped due to a conveyor jam or when the clean dish table is full of racks and additional racks cannot exit the machine.
3. The table limit switch option installation is recommended for all dishwashers and can be ordered from the factory by P/N 407400.

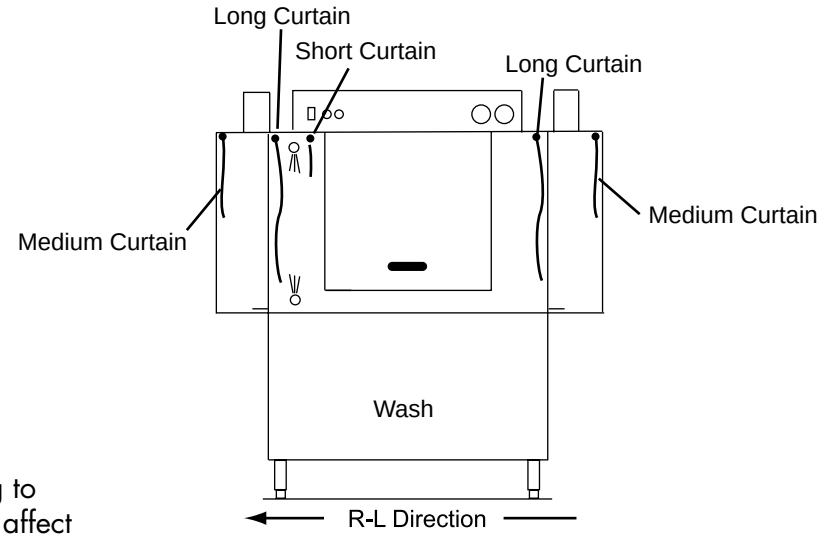


Curtain Locations

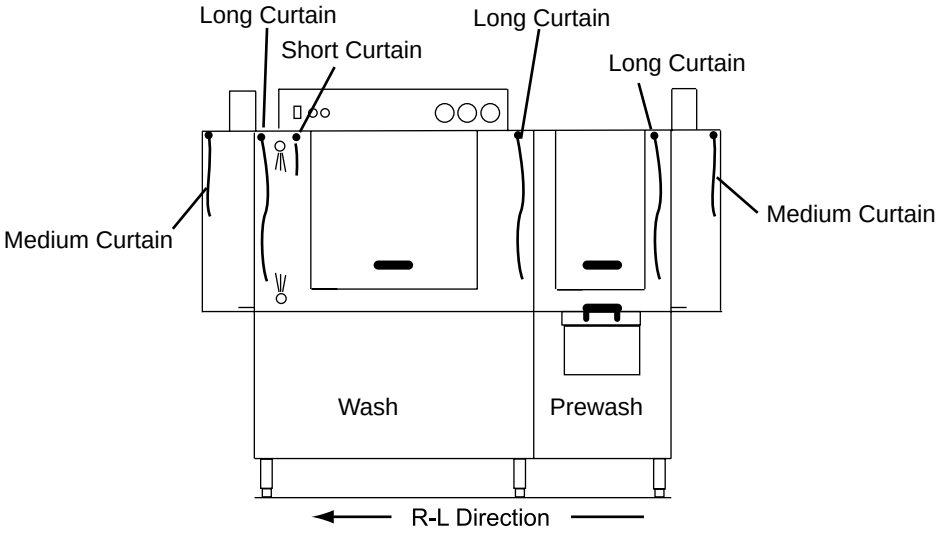
1. Refer to the illustrations below and hang the curtains as shown.
   J-hooks are located in the corners of each section to accept the curtain rods.

   - Standard long curtains 24" x 20-1/4"
   - Standard medium curtains 24" x 13-/14"
   - Standard short curtain 24" x 6-1/4"

2. Make sure the that the short flaps of the curtains face the load end of the dishwasher.



NOTE:
Misplacing a curtain or failing to install a curtain will adversely affect the proper operation of the machine.



Door Safety Switches

Dishwasher access doors are equipped with a door safety switch that automatically stops the dishwasher pumps and conveyor drive if a door is raised while the dishwasher is running. In addition, the dishwasher will not start if a door is left open.

1. If the dishwasher is running and a door is raised, then lighted GREEN START pushbutton goes out and the pumps and conveyor drive stop.

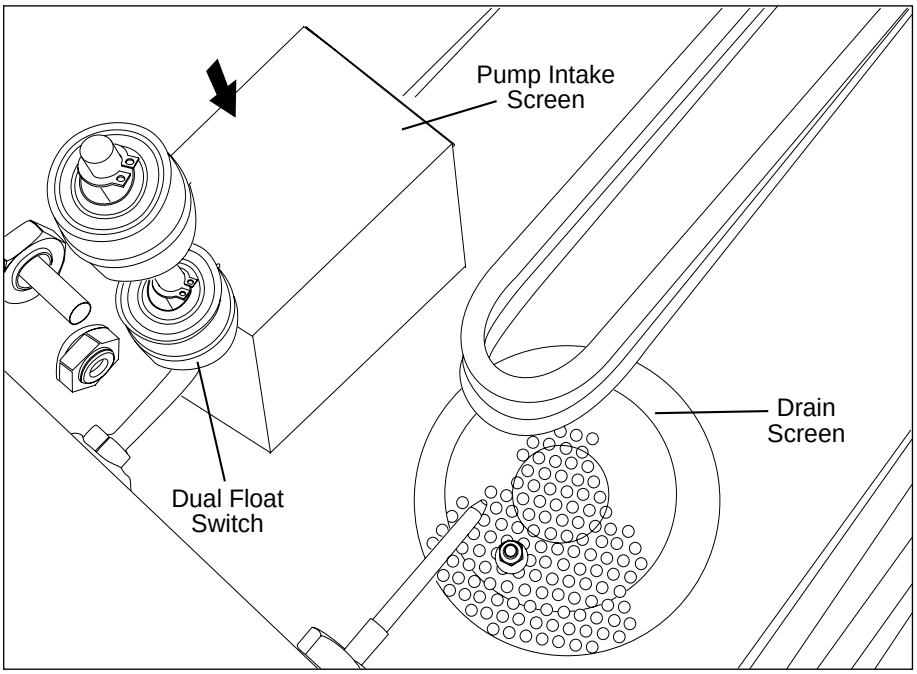
2. Check the interior of the dishwasher for any dish racks still in the machine. These dish racks must be washed again to ensure they are washed and sanitized completely.

3. To restart the dishwasher, make sure all doors are closed, then push the GREEN START pushbutton.

Pump Intake Screen and Dual Float Switch

Refer to the illustration below and note the location of the pump intake screen and dual float switch.

1. Make sure the pump intake screen is installed by sliding it on the bracket located in front of the wash pump intake.
2. Make sure the float balls on the dual float switch move freely on the float stem.
3. Check the interior of the tank for any foreign objects and make sure the drain screen is clean.

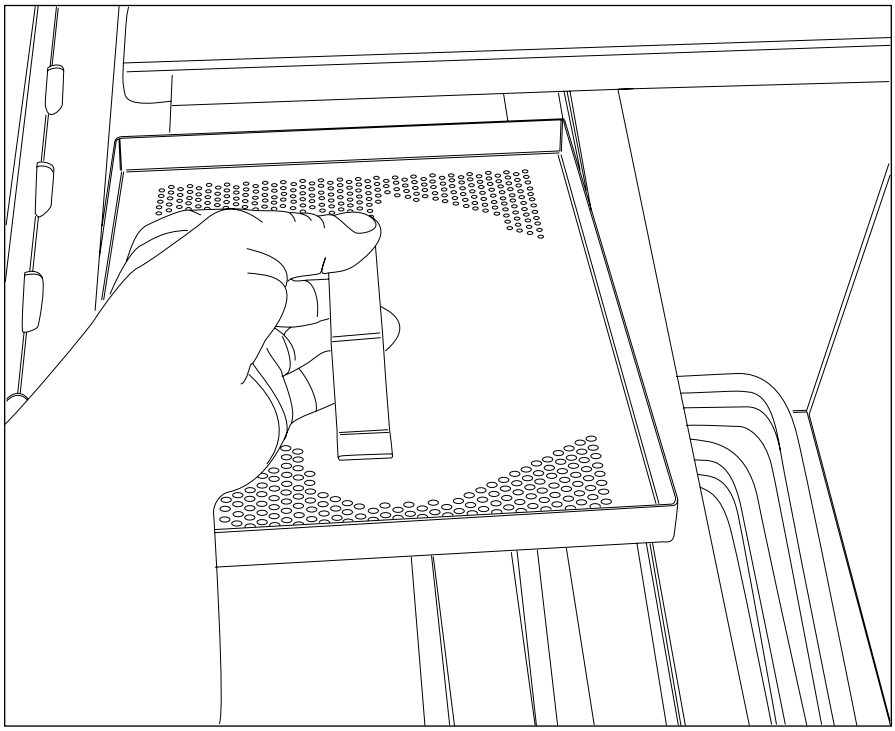


Make sure tank is clean, the pump intake screen is installed and the dual float switch moves freely.

Scrap Screens

1. All models have scrap screens in the top of the wash tank.

   Install four scrap screens in the wash tank making sure they fit securely without large gaps between them.



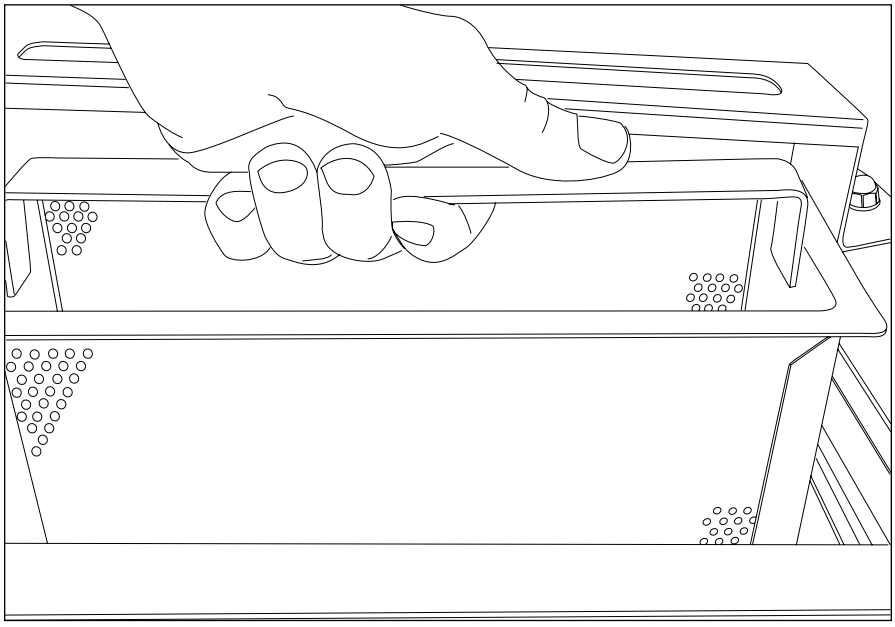
All models have four scrap screens in the wash tank.

2. The model CH-66 and the MD-66 has a prewash tank containing a single large scrap screen which extends from front to back in the prewash tank.

   The prewash screen also holds a refuse basket to facillitate cleaning when the machine is off.

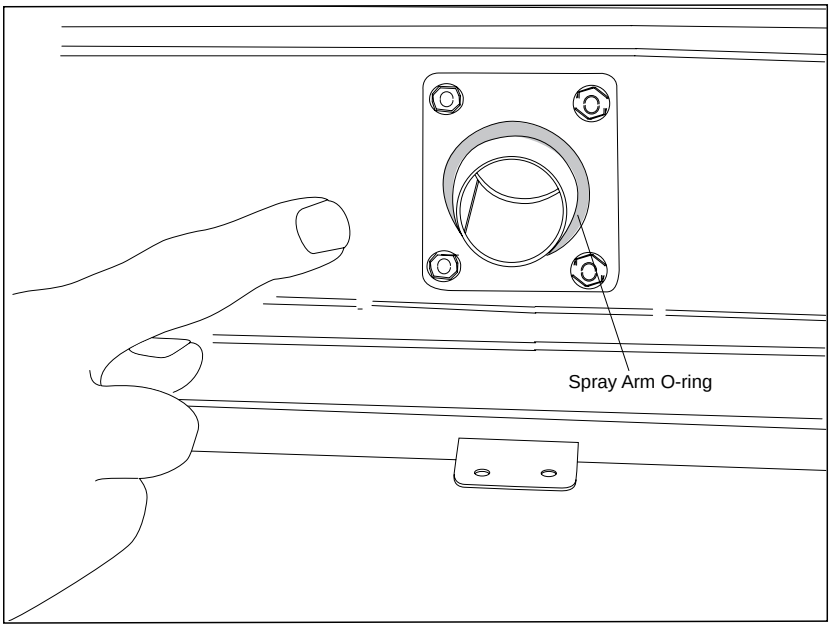
   Install the large scrap screen making sure the screen fits securely in the front and back of the tank then install the refuse basket as shown in the illustration to the right.

   Never remove the prewash scrap screen while the dish-washer is running.



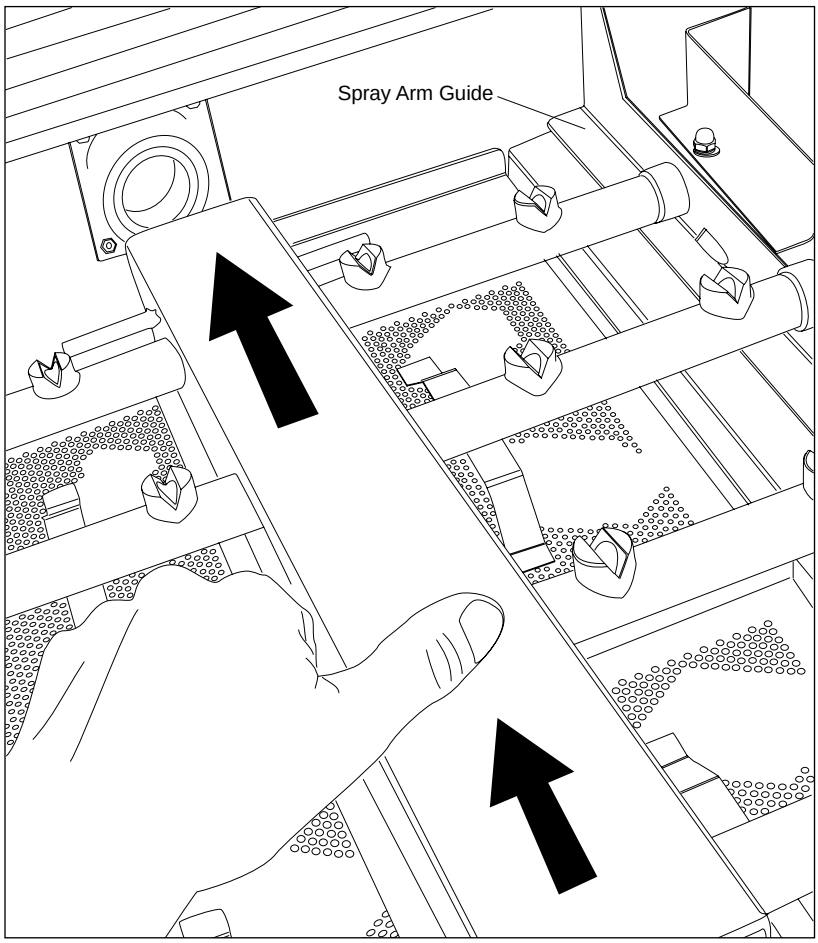
Model CH-66 and MD-66 has a scrap screen and refuse basket located in the prewash tank.

Installing the Lower Spray arm Assembly



1. The lower spray arm assembly is connected to the rear wall of the wash tank.

2. The spray arm o-ring makes a water-tight seal when the spray arm is properly seated.

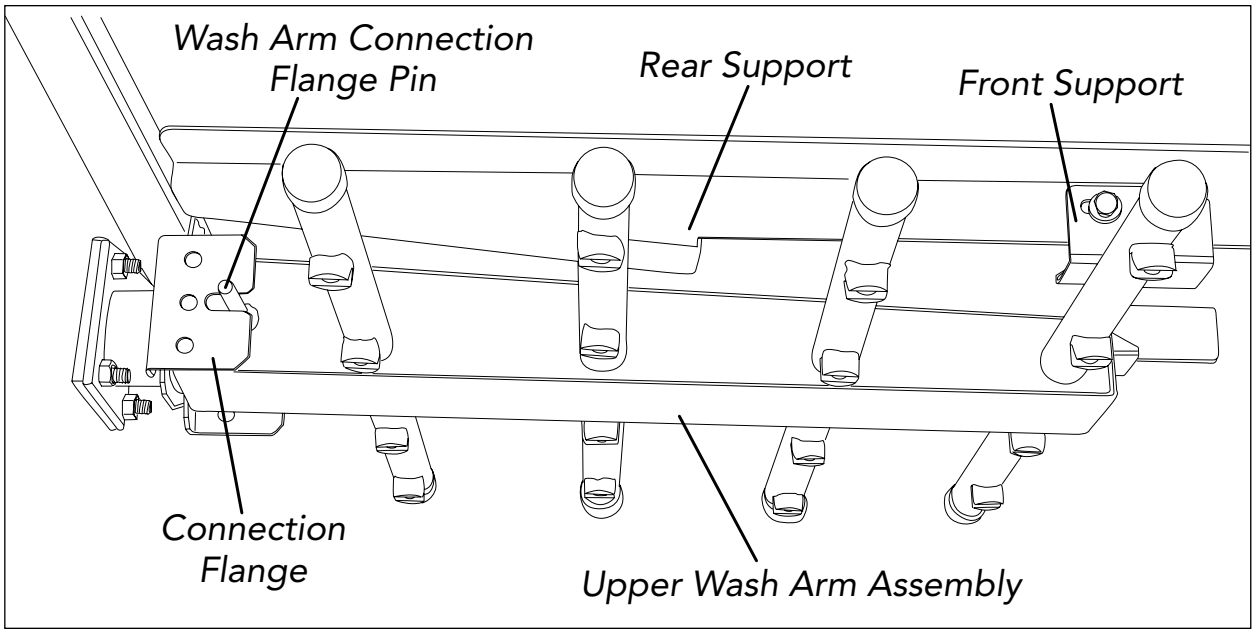


3. Slide the lower arm into place making sure the spray arm is fully back and contacting the spray arm o-ring.

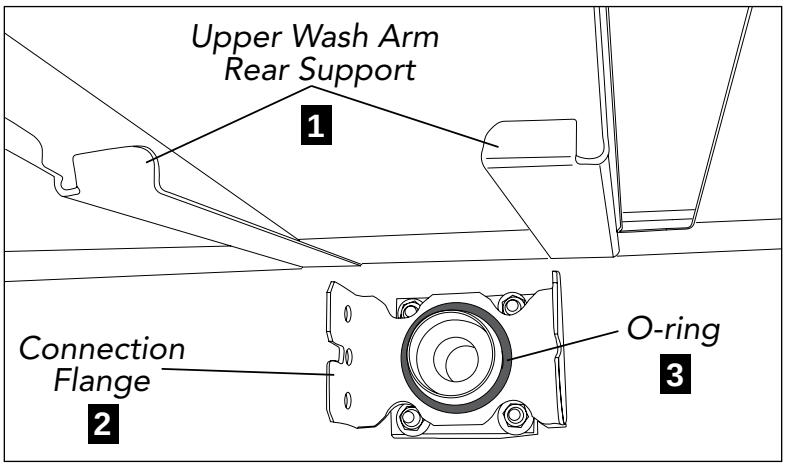
4. The spray pipes are supported on each side by the spray arm guides and will lock the spray arm securely in place.

Installing the Upper Spray Arm Assembly

The upper wash arm assembly is suspended from the top of the dishwasher hood interior by front and rear supports. Follow the instructions and illustrations below to install the upper wash arm assembly.



Upper wash arm assembly shown installed.
(Note that the Wash Arm Connection Flange Pin is seated in the Connection Flange.)



Make sure the upper spray arm o-ring is in good condition and fits securely in the connection flange before installing the upper wash arm assembly.

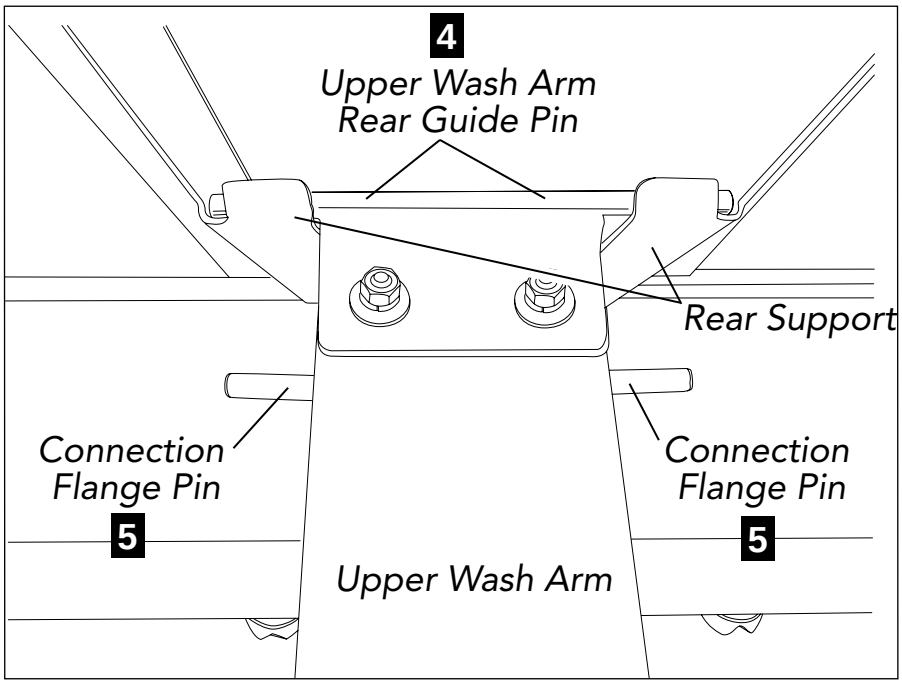
Components

1. Upper Wash Arm Rear Support
   The rear support holds the wash arm and serves as a guide when the upper wash arm is pushed to the toward the connection flange at the rear of the dishwasher.
2. Connection Flange
   The connection flange holds the wash arm securely in place when the upper wash arm is placed in position. In addition, the connection flange holds the wash arm o-ring in position.
3. O-ring
   The wash arm o-ring rests in the center of the connection flange and forms a water-tight seal when the upper wash arm is in place.

Installing the Upper Spray Arm Assembly (continued)

1. Upper Wash Arm Rear Guide Pin
   The rear guide pin is attached to the rear of the upper wash arm. It mates with the upper wash arm rear support.

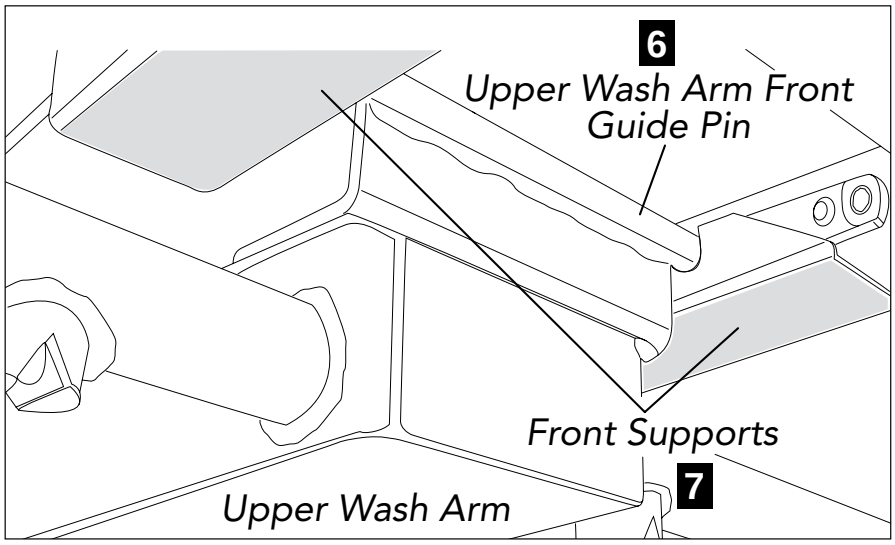
2. Connection Flange Pins
   The connection flange pins are welded to the sides of the upper wash arm. These pins mate with two slots in the connection flange to hold the wash arm in place when installed.



The upper wash arm is shown with the rear guide pin placed on the rear support before sliding the upper wash arm into position.

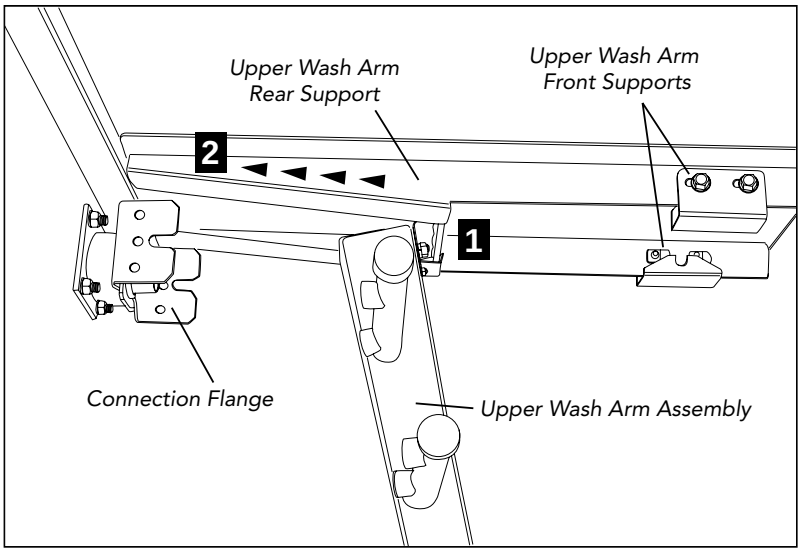
3. Upper Wash Arm Front Guide Pin
   The front guide pin is attached to the front of the upper wash arm. It mates with the front supports.

4. Front Supports
   There are two fronts supports which hold the front of the upper wash arm in place when the wash arm is installed.

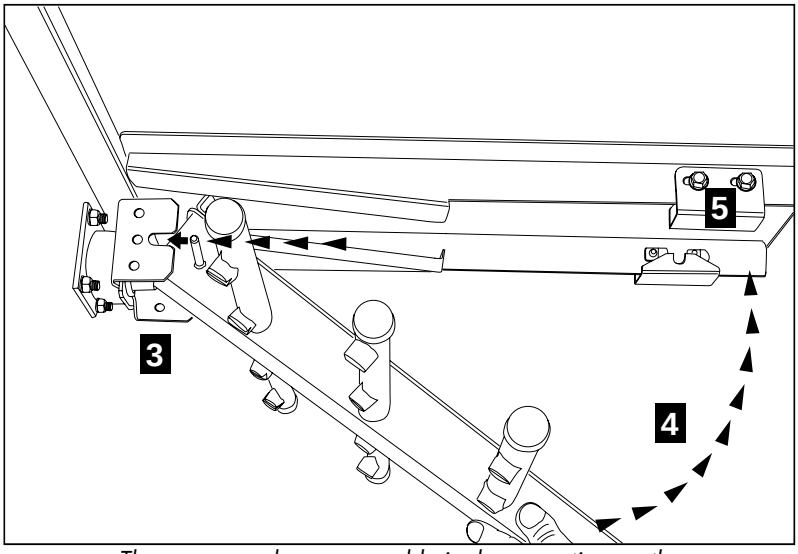


The upper wash arm is shown with the front guide pin resting in the front supports.

Installing the Upper Spray Arm Assembly



The upper wash arm assembly is shown resting on the upper wash arm rear support as it slides toward the connection flange.



The upper wash arm assembly is shown resting on the upper wash arm rear support as it slides toward the connection flange.

Installation

1. Open the dishwasher access doors and check the location and condition of the connection flange o-ring. Replace the o-ring if it is worn or damaged.

   Place the upper wash arm rear guide pin in the rear support so the wash arm hangs in the support.

2. Slide the upper wash arm toward the rear of the dishwasher making sure the rear guide pin is centered in the rear supports.

3. Raise the front of the wash arm so the connection flange pin mates with the connection flange pin slots.

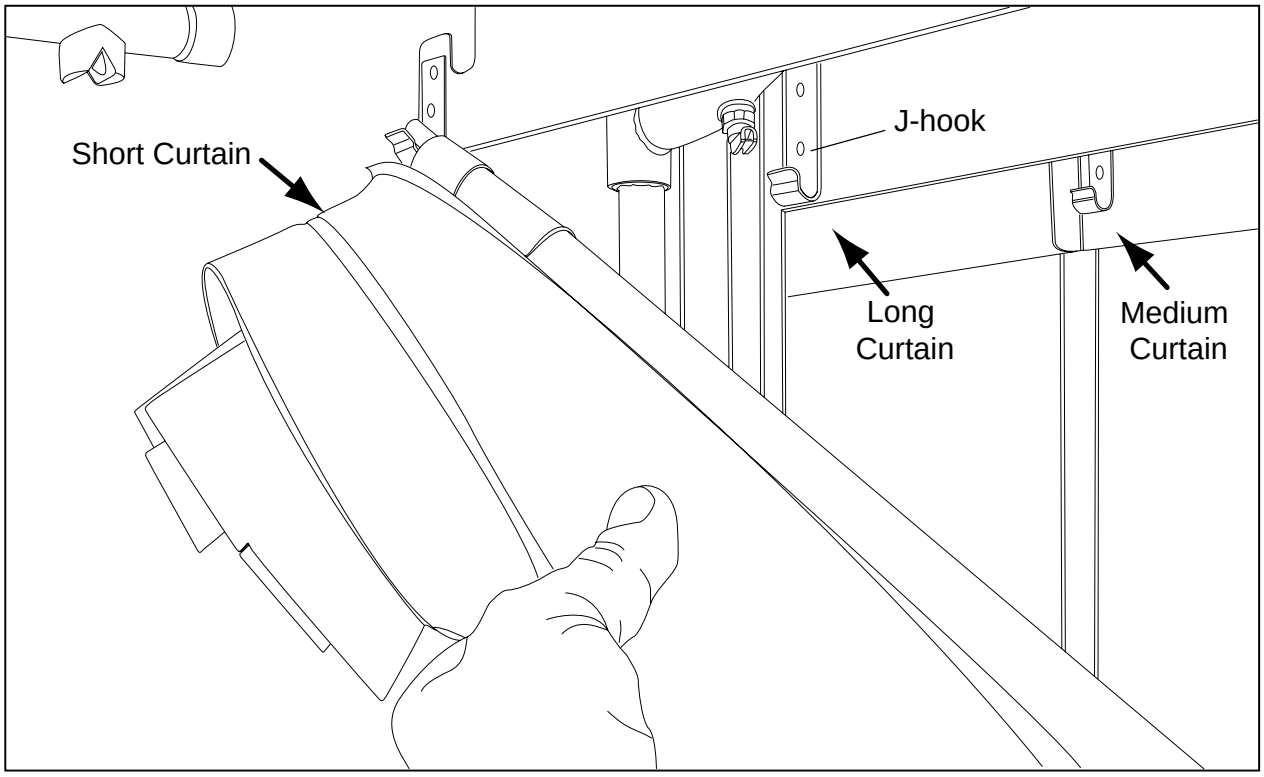
4. Swing the front of the wash arm up toward the front of the dishwasher.

   The wash arm front guide pin should be positioned close to the door opening and before the front wash arm supports.

5. Slide the upper wash arm forward as far as it will go making sure that the front guide pin is above the front support notched cut-out.

   Lower the upper wash arm so the front guide pin seats securely in the front support notch. Installation is complete.

Installing the Curtains



Curtain Installation Shown at the Final Rinse End of the Dishwasher

1. Curtain are equipped with curtain rods. The rods are hung on J-hooks located in the top of the dishwasher.

2. Make sure that the short flaps on the curtains face the load end of the dishwasher.

3. Refer to page 7, *Curtain Locations,* for additional information on curtain placement.

Check List

1. Remove white protective film from the dishwasher exterior.
2. Install lower panels to the dishwasher.
3. Remove any foreign material from inside of the machine.
4. Check dishwasher drain/overflows are closed and in securely seated.
5. Install scrap screens, spray arms.
6. Turn main utilities to the dishwasher ON. (Power, water).
7. Make sure doors are closed.
8. Turn dishwasher power switch ON. Machine fills with water and tank heat comes on.
9. Check tank water temperatures reach proper levels.
10. Check for leaks.
11. Push the Start button. Green light comes on.
12. Insert an empty dish rack into the load end of the dishwasher. The pumps and conveyor will run.
13. Allow the dish rack to travel to the unload end of the dishwasher. The final rinse will run.
14. Allow the rack to exit the dishwasher. The dishwasher should have run for 90 seconds.
15. Place another dish rack in the machine to start another cycle.
16. Open each dishwasher door to make sure the safety switch stops the conveyor.
17. Immediately close the door, the dishwasher should restart.
18. Open the door and leave it open for 5 minutes. The machine should stop. Push the Start button and the machine should restart when a rack is inserted into the machine.
19. Push the Stop button when the machine is running and the dishwasher should stop.
20. Push the dishwasher Power Switch OFF. The dishwasher should shut down.
21. Drain the dishwasher and check that floor drains handle the water volume leaving the dishwasher.

NOTE:

If the drain valve is open when the dishwasher is filling, the machine will fill for 10 minutes, then the machine will shut-down and the green light will blink on and off. Flip the dishwasher power switch off and close the drain valve. Flip the power switch on and fill the machine.

Control Panel Operation - CH-44, CH-66

The final rinse pressure gauge is located behind the control panel. The top-mounted control panel contains the Power ON/OFF switch, start push button, stop push button, and the water temperature gauges for the wash tank and the final rinse. The function of these controls are:

A Final Rinse Pressure Gauge - Indicates the flowing water pressure during the final rinse. Proper reading is 20-22 PSI.

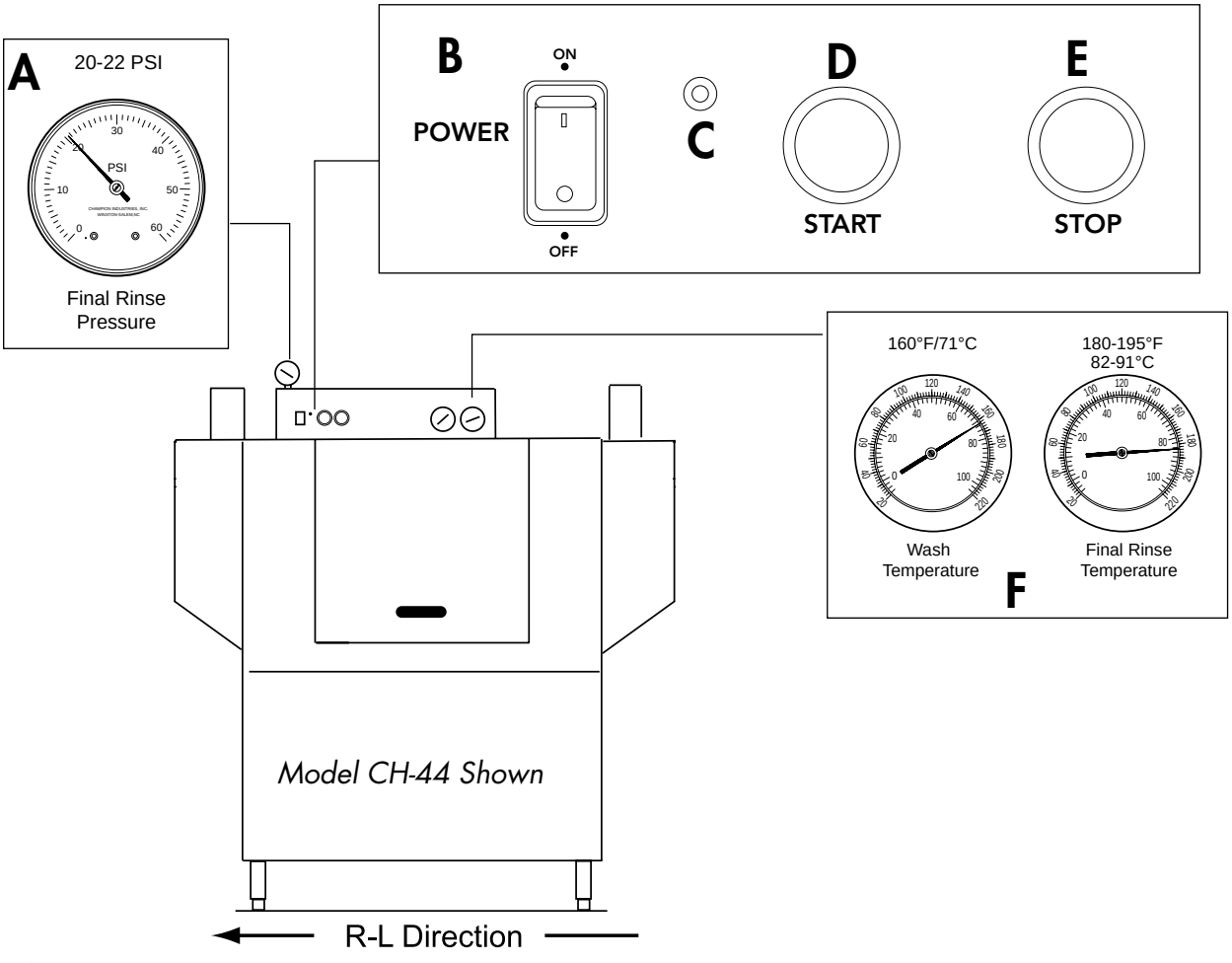
B Power Switch - Turns power on and off to the dishwasher. The machine fills automatically when the power is turned on.

C Cycle Light - Indicates when the dishwasher is ready for automatic operation.

D Start Push button - Pushing the Start push button sets the machine for automatic operation. The conveyor and pumps start when a dish rack is inserted into the machine.

E Stop Push button - Pushing the Stop push button stops the conveyor and pumps.

F Temperature Gauges - Temperature gauges indicate the water temperature in the wash tank.The final rinse water temperature is indicated during the final rinse.



MD-44, MD-66 - Control Panel Operation

The final rinse pressure gauge is located behind the control panel. The top-mounted control panel contains the Power ON/OFF switch, start push button, stop push button, and the water temperature gauges for the wash tank and the final rinse. The function of these controls are:

A Final Rinse Pressure Gauge - Indicates the flowing water pressure during the final rinse. Proper reading is 20-22 PSI.

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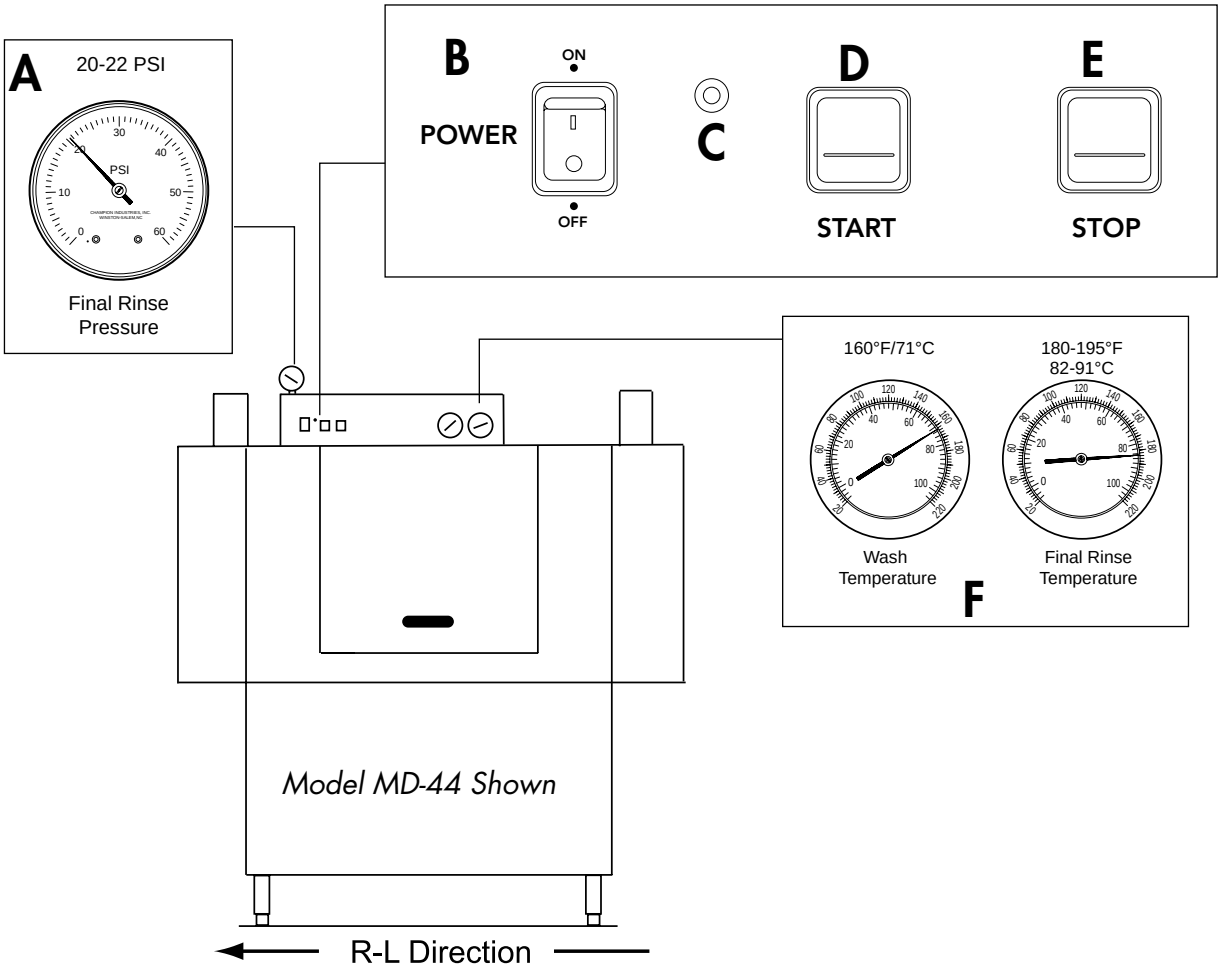
C Cycle Light - Indicates when the dishwasher is ready for automatic operation.

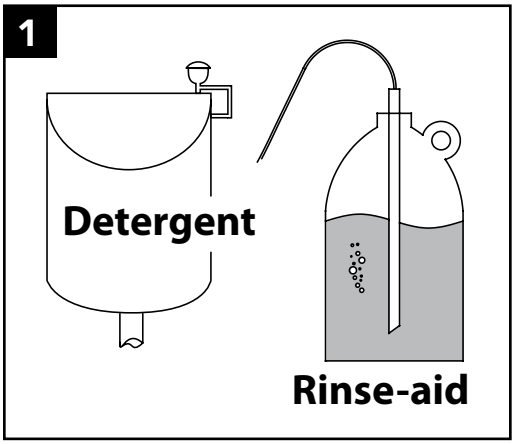
D Start Push button - Pushing the Start push button sets the machine for automatic operation. The conveyor and pumps start when a dish rack is inserted into the machine.

E Stop Push button - Pushing the Stop push button stops the conveyor and pumps.

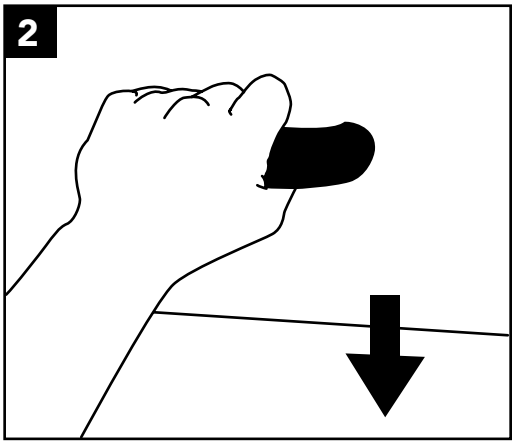
F Temperature Gauges - Temperature gauges indicate the water temperature in the wash tank.The final rinse water temperature is indicated during the final rinse.



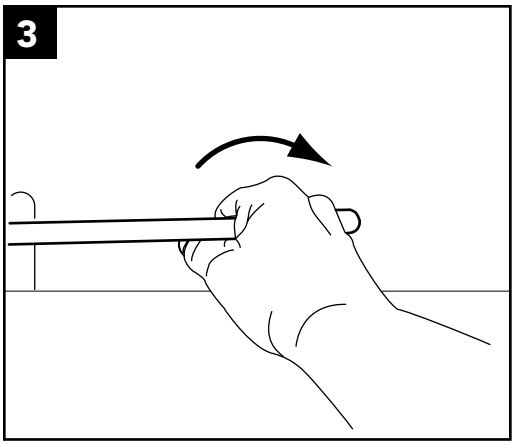
Operation



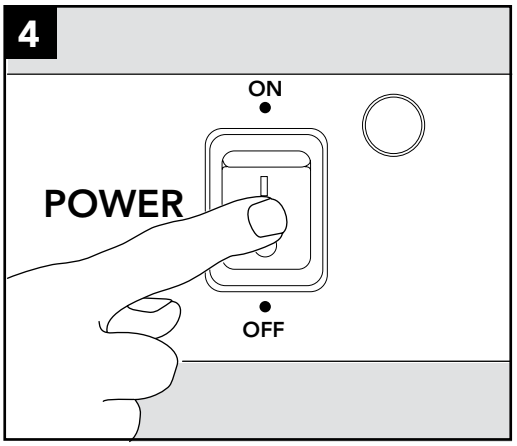
Check the chemical containers and refill as necessary.



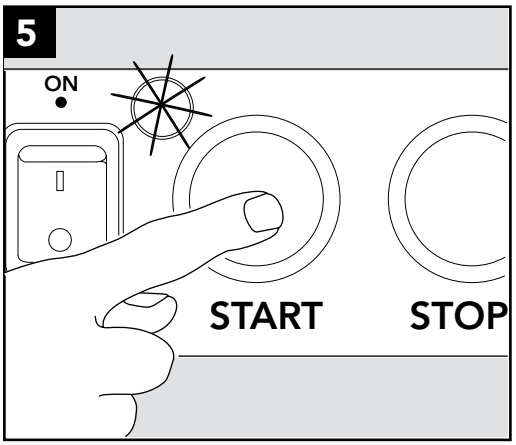
Close the doors.



Turn drain handle clockwise to close the drains.

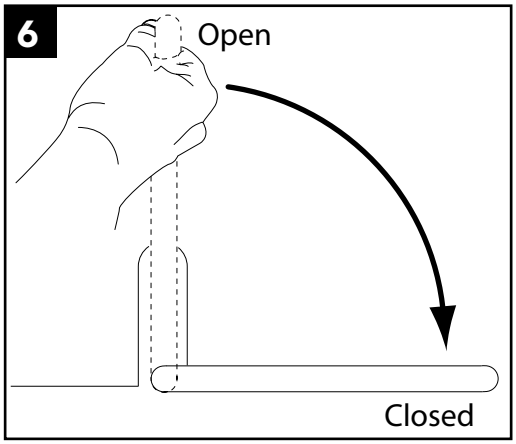


Flip power switch UP to the ON position.

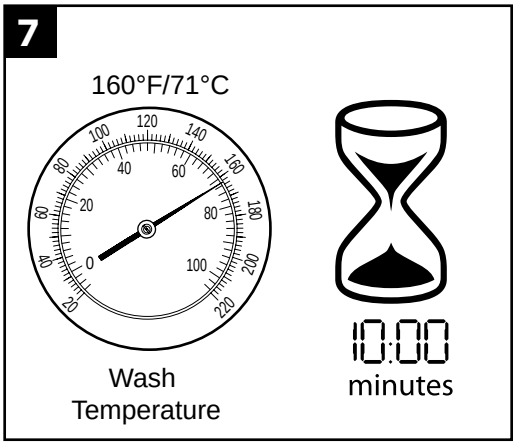


Push START switch. The green light illuminates. The machine fills with water and the tank heat comes on.

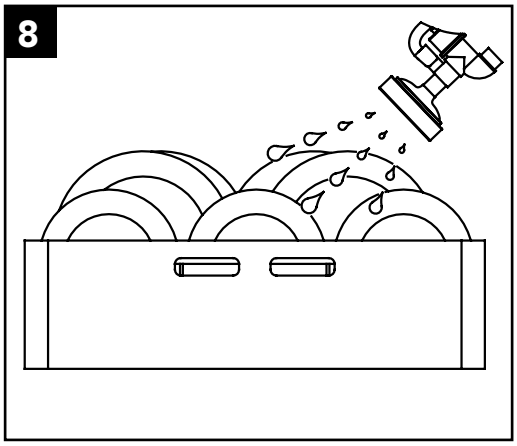
Operation



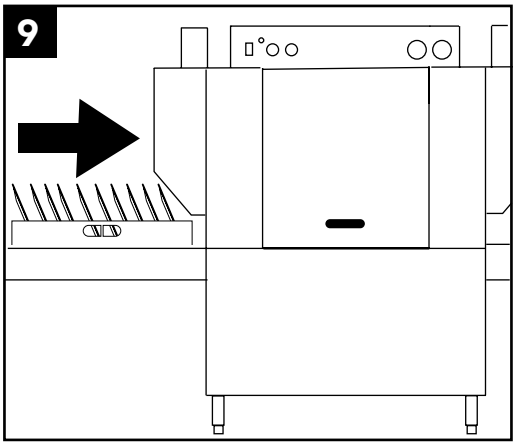
If the drain is open or the fill runs for more 10 minutes then the dishwasher shuts down & the green light blinks on and off. Close the drain or check the fill, then push the power switch off and back on to reset. Push the Start switch to restart operation.



Wait 10 minutes for the wash gauge to indicate 160°F/71°C.



Prescrap & load wares into dish racks. Plates and glasses go in peg rack, cups and bowls go in a flat rack. Place silverware in a single layer in flat rack.

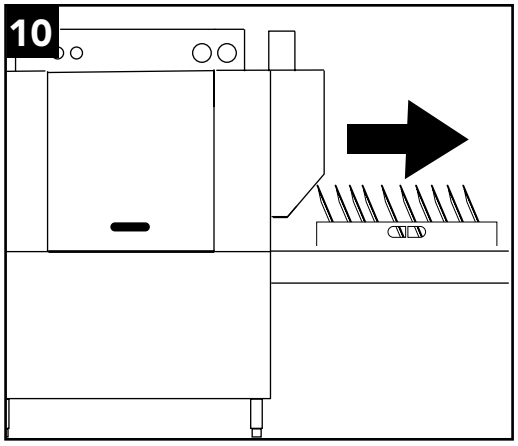


Insert a dish rack of wares into the dishwasher. The pumps and conveyor will run.

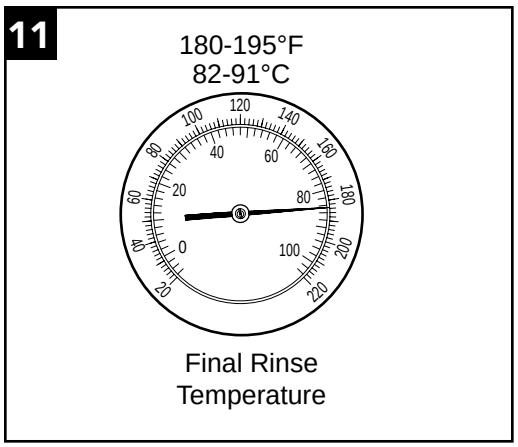
NOTE:
Opening a door will stop the pumps and drive. If the door is closed within 5 minutes the machine will resume operation where it left off. After 5 minutes the START switch must be pressed and a dish rack inserted into the machine for normal operation.

continued on next page

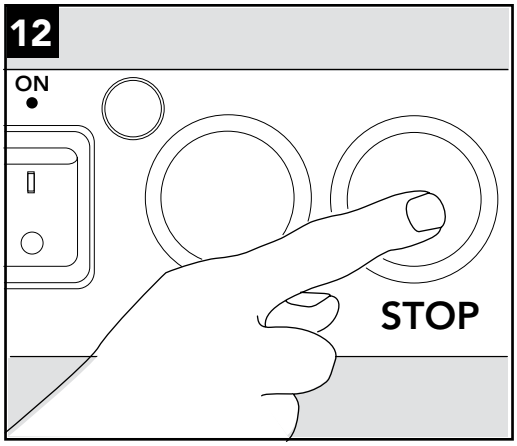
Operation (continued)



The dishwasher pumps and drive runs 90 seconds after the rack enters the machine. Loading additional racks before the first rack exits the machine resets the timer.



Check the final rinse temperature during the final rinse cycle to ensure the gauge indicates 180-195ºF/82-91ºC.



Push the STOP switch to stop the pumps and the drive. The green light goes out. Push the START switch and insert a dish rack to restart operation.

NOTE:
In the event of a conveyor jam or a tripped table limit switch, the dishwasher pumps and drive will stop. The operator should check the conveyor for articles stuck in the drive or in the case of the table limit switch, remove dish racks from the clean-end table. The START switch must be pressed and a dish rack inserted into the machine to resume normal operation.

NOTE:
To shut the dishwasher down, press the stop button. Flip the POWER switch down to the OFF position. Open the doors and remove any dish racks left in the machine. Open the drain to drain the water from the tanks.

Cleaning

Cleaning your dishwasher is the best maintenance you can do.The cleaning intervals below are the minimum requirements for most dishwashers.You may need to clean your dishwasher more often when washing heavily soiled wares or during long periods of continuous operation.

Daily or every 2 hours of operation

1. Turn power switch to OFF.
2. Pull drain lever(s) to drain water. Remove scrap screens and scrap baskets. Clean inside of the tanks and flush with clean water. Back flush the scrap screens until clean.

DO NOT STRIKE SCREENS OR BASKETS AGAINST SOLID OBJECTS

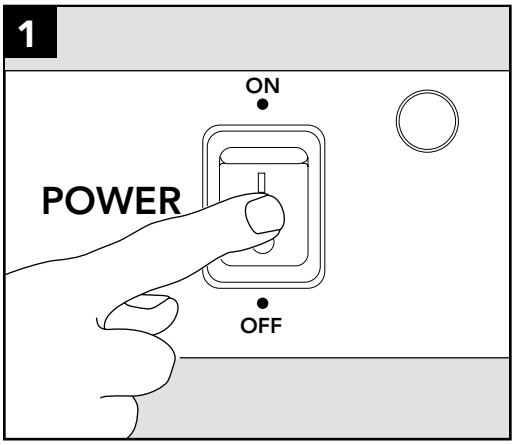
3. Remove the spray arm assemblies. Remove the end cap from each spray arm.
4. Flush the spray arms and nozzles to remove any debris.
5. Replace the end caps. Check the condition of the manifold O-ring.
6. Reinstall the spray arms.
7. Remove and clean the curtains. Allow them to dry at the end of the day.
8. Leave the doors open between operations, allowing the machine to dry.
9. Make sure that the final rinse nozzles are clear of mineral deposits.
10. Straighten a metal paper clip to clean the nozzles.
11. Check the temperature and pressure gauge readings during operation.
12. Inspect the machine for signs of water leaks.
13. Check the chemical supplies and refill as necessary.

At the End of the Day

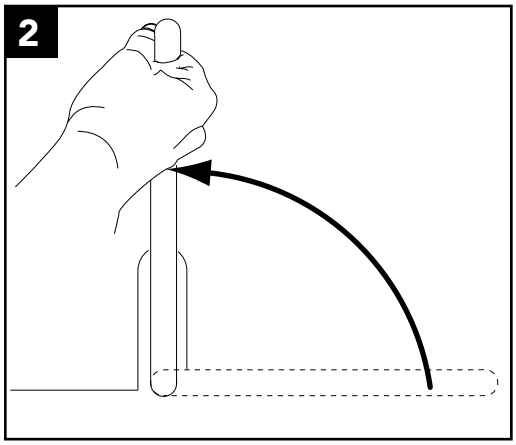
1. Perform Steps 1-10 on the previous page.
2. Remove the upper and lower rinse and wash spray arms and end plugs a nd flush with fresh water.
3. Clean the final rinse arm nozzles using a small paper clip.
4. Remove the curtains and clean with fresh water.
   DO NOT USE STEEL WOOL TO CLEAN THE INTERIOR OF THE MACHINE.
5. Wipe the interior and exterior of the machine with a soft cloth and a mild detergent.
   DO NOT HOSE THE EXTERIOR OF THE MACHINE WITH WATER.
6. Reassemble the dishwasher and leave the door open to allow overnight drying.
7. Contact the chemical supplier for de-liming if required.

continued on next page

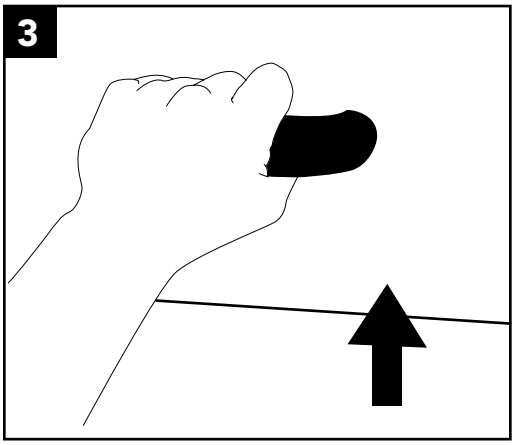
Cleaning (continued)



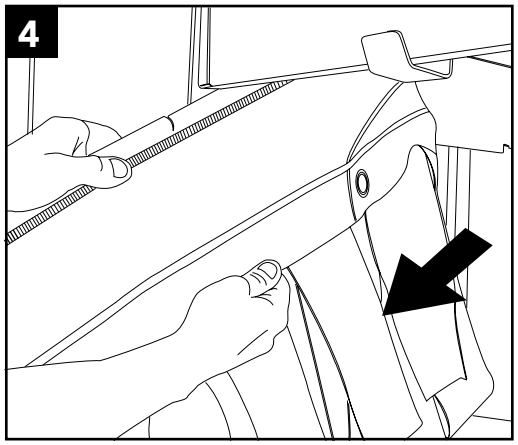
Flip power switch down to the OFF position.



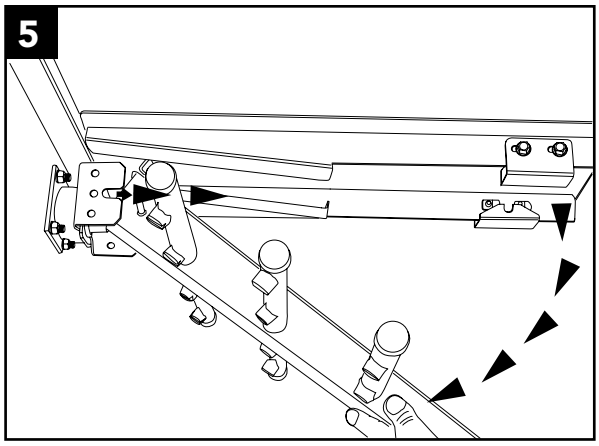
Turn drain handle counter-clockwise to the vertical position to drain the tanks.



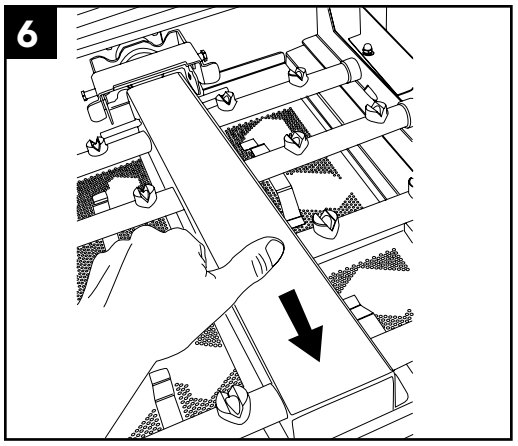
Open doors.



Remove curtain assemblies and rinse clean in a sink.

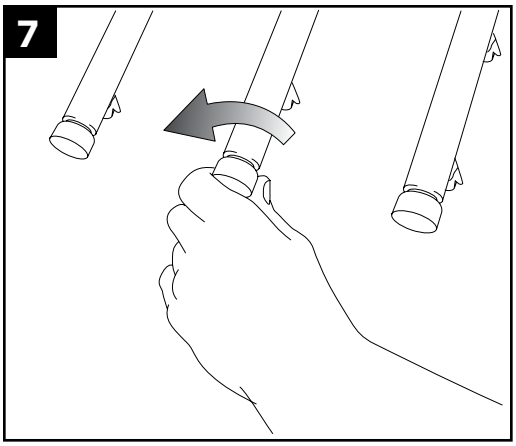


Remove the upper wash arm assemblies and flush clean in a sink.



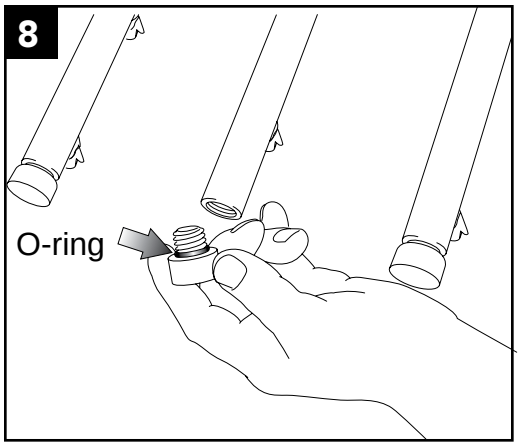
Remove lower wash arm assemblies and flush clean in a sink.

7



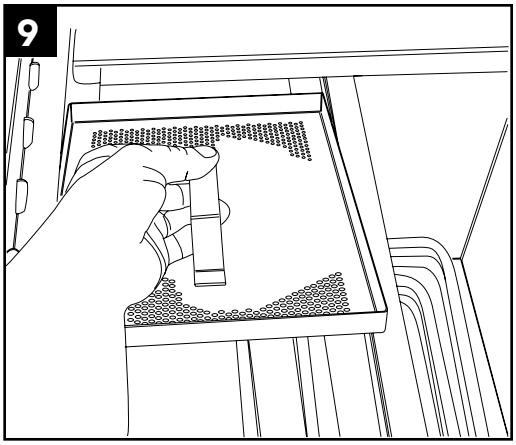
Remove the end plugs on each wash arm and flush the pipes clean.

8



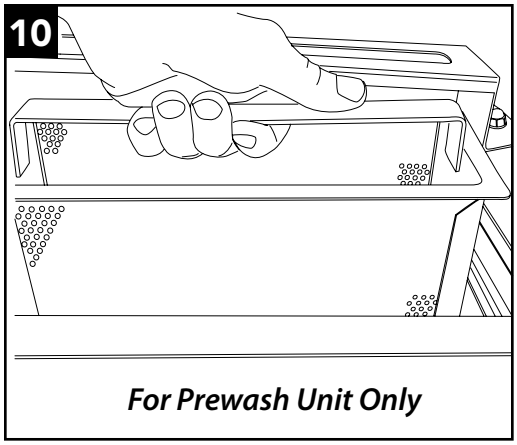
Check the o-ring on each plug and replace if necessary.

9



Remove the scrap screens and back-flush in a sink. Do not strike the screens on hard surfaces.

10

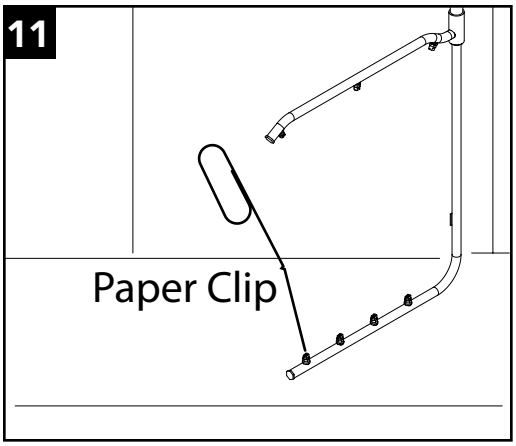


For Prewash Unit Only

Remove the refuse basket and back-flush in a sink. Do not strike the basket on hard surfaces.

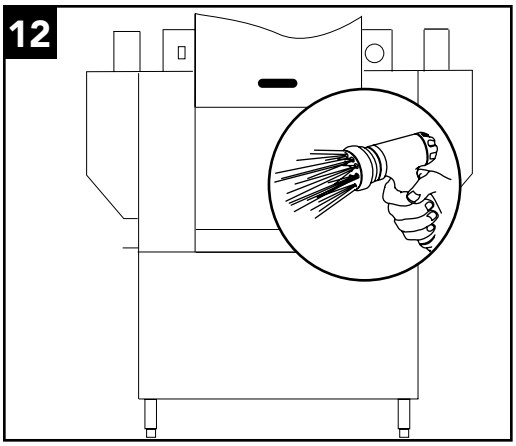
Cleaning (continued)

11



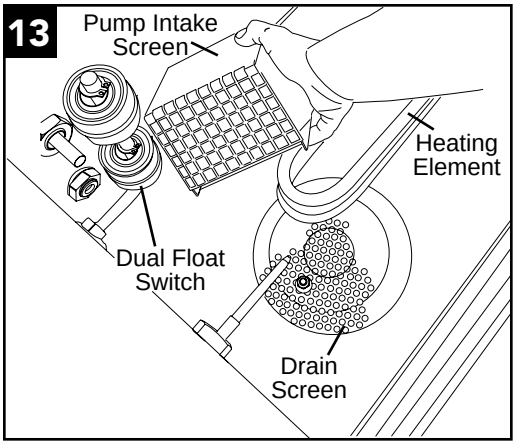
Check the final rinse nozzles and clean with a small paper clip as required.

12



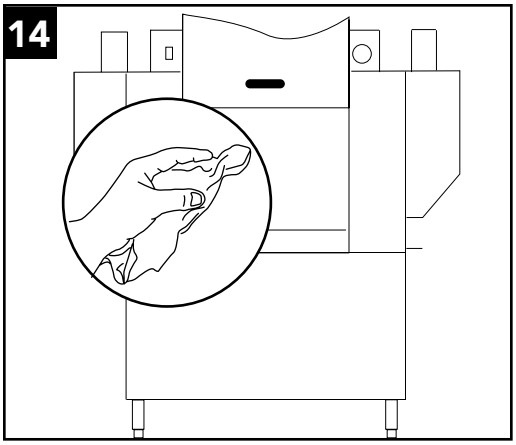
Thoroughly spray the interior of the machine with fresh clean water.

13



Remove the pump intake screen and flush clean in a sink. Check and clean the dual float switch, heating element and drain screen.

14



Wipe the exterior of the machine with mild detergent and soft cloth. DO NOT HOSE DOWN WITH WATER.

NOTE:
Leave the doors open to aid in drying overnight.

De-liming

Lime (scale) deposits are the result of minerals contained in the water feeding the dishwasher and appear as a white haze on the surface of the dishwasher. Severe scaling can appear as a granular deposit. These deposits are the result of the mineral content in the geographic area in which the machine is located.

WARNING:
Death or injury can result from toxic fume when de-liming agents come in contact with Chlorine Bleach, or other chemicals that contain iodine, bromine, or fluorine.

USE EXTREME CAUTION WHEN HANDLING ANY DE-LIMING AGENT.

CAUTION:
De-liming agents can cause chemical burns.
Wear rubber gloves, eye protection and any other protective clothing as instructed by a qualified chemical supplier and follow the instructions provided by the chemical supplier.

Maintenance

Weekly

1. Inspect all water lines for leaks and tighten at joints if required.
2. Clean any detergent residue from the exterior of the machine.
3. Check that the drain/overflow pipes seat tightly in their drains.
4. Clean any accumulated scale from the heating element.
5. Inspect the spray arms for any damage or missing parts.
6. Inspect the final rinse arms for missing parts.
7. Inspect the pawl bar and drive assembly for damage or missing parts.
8. Check that float switches move freely.
9. Check the idle pump actuator and the final rinse actuator for freedom of travel.

Monthly

1. Inspect interior of machine for lime deposits and clean.
2. Check o-rings on spray arm piping connections.
3. Check that the drain/overflow o-rings
4. Clean any accumulated scale from the heating element.
5. Inspect the spray arms o-rings and ensure all plugs are installed.
6. Inspect the final rinse arms for missing parts and are clean.
7. Inspect the pawl bar and drive assembly for damage or missing parts.
8. Check that float switches move freely.
9. Check the idle pump actuator and the final rinse actuator for freedom of travel.
10. Check the drive clutch and adjust as necessary.
11. Check the pump rotation and direction of rotation.
12. Check the operation of temperature gauges or displays.
13. Perform complete operation check.

Yearly

1. Contact authorized service agent to perform complete maintenance review of machine.
2. Correct any abnormal situations as recommended.

Before calling for service check the following conditions.

1. Dishwasher main power and water supply is on.
2. Machine has been assembled correctly.
3. Conveyor is clear of any obstructions.
4. Drains are closed.
5. Screens and pump intake screens are clear.
6. Doors are closed and secure.

Condition	Cause	Solution
Dishwasher will not run.	Door not closed. Main power OFF. Dishwasher OFF. Dish rack inserted wrong	Close door completely. Check breaker on panel. Turn dishwasher ON. Check dish rack loading.
Low or no water.	Main water supply off. PRV setting incorrect Solenoid strainer clogged. Solenoid valve defective.	Open supply valve. Adjust the PRV setting Clean strainer. Contact Service Agent.
Poor wash results.	Detergent not added to tank Wares incorrectly loaded. in dishrack. Clogged screens . Clogged spray arms. Thermostat defective. End plugs missing. Water temperature low.	Check detergent suppy. Reposition wares or reduce amount of wares. Clean screens.. Clean spray arms. Contact Service Agent. Check spray arms. Check incoming water temperature.
Dishwasher stays in wash cycle.	90-second timer defective	Contact Service Agent
Dishwasher conveyor will not run.	Conveyor jammed or table limit switch has stopped conveyor.	Check conveyor for jams Remove racks from load end of table.

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Service Replacement Parts

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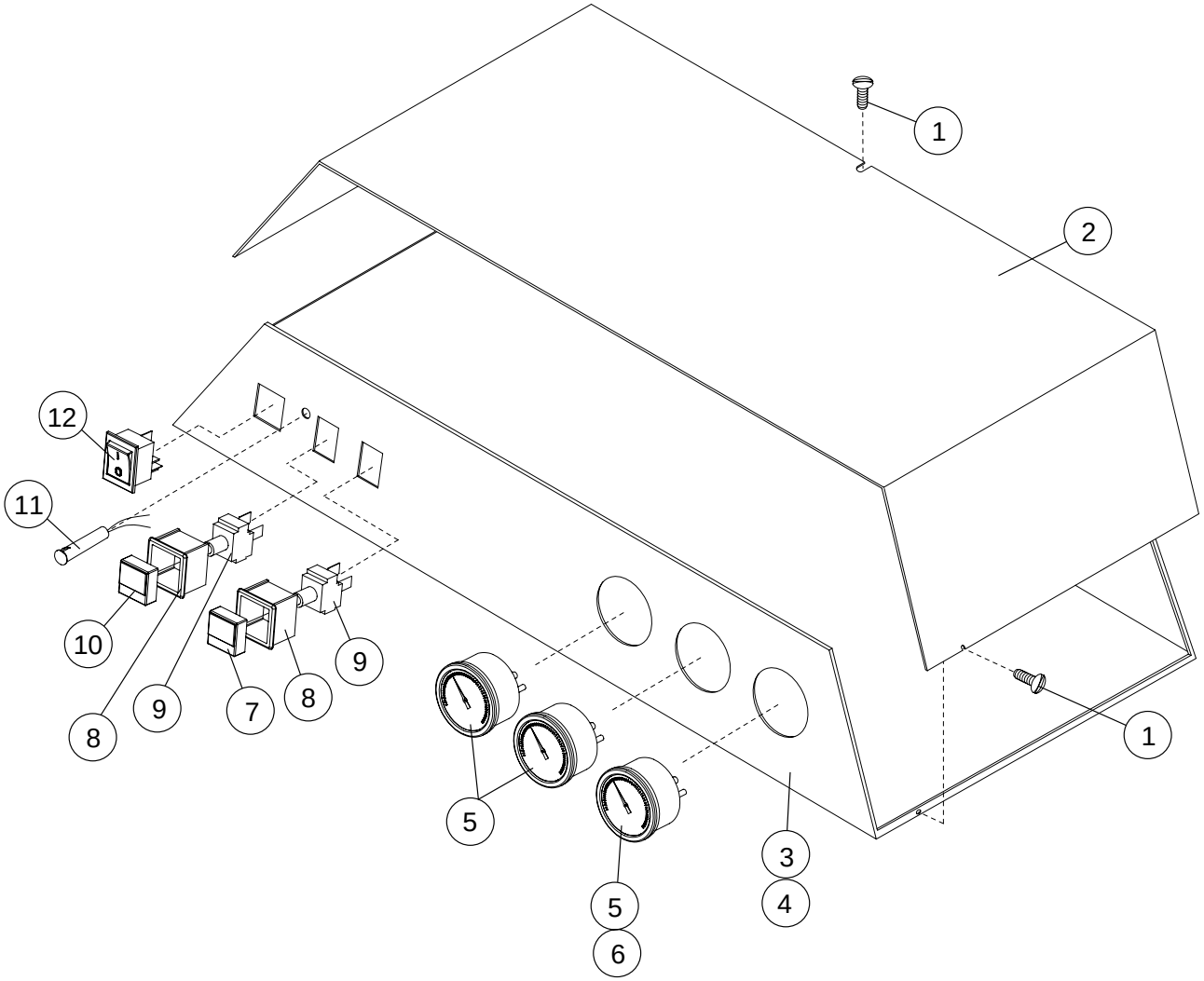
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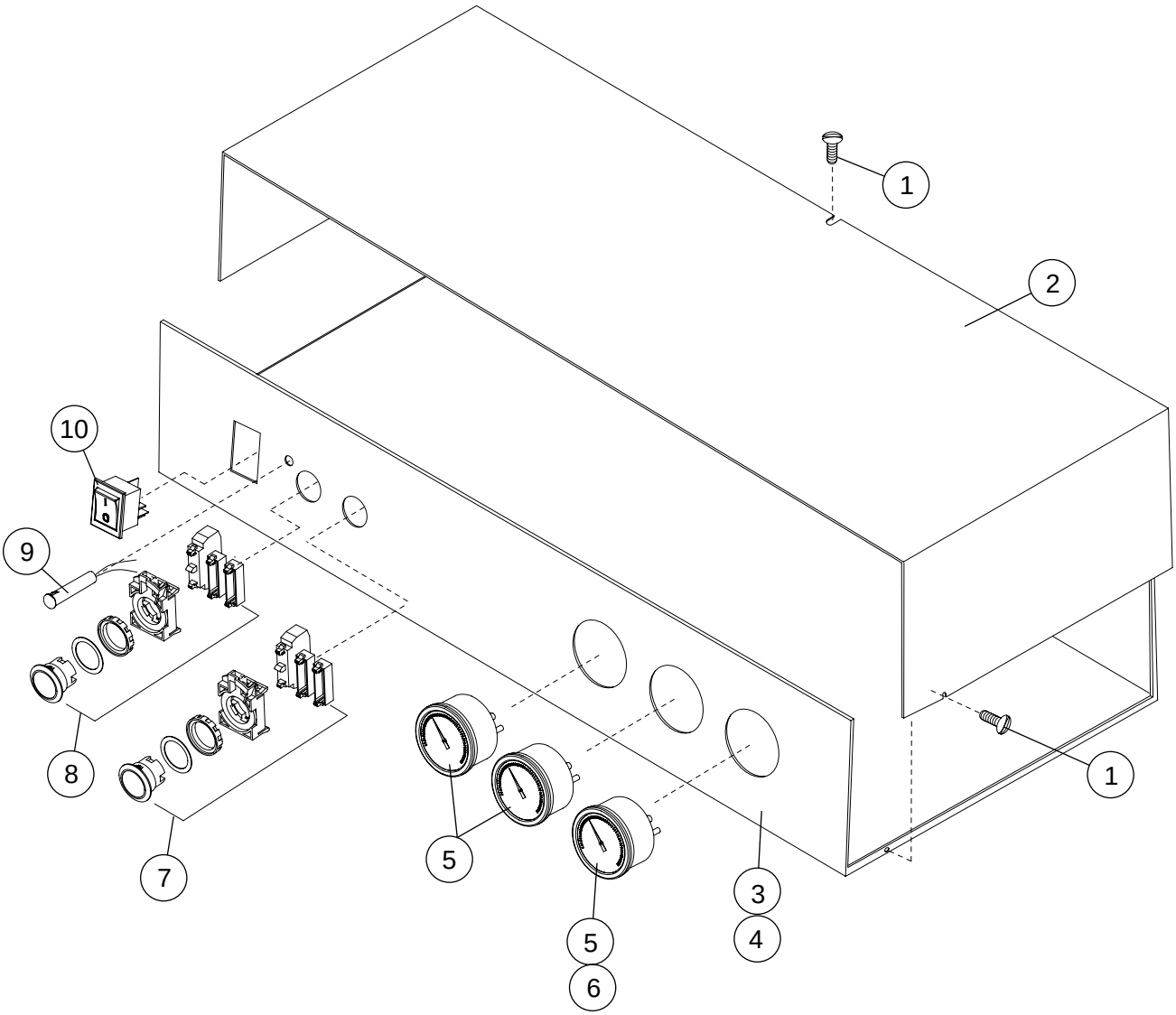
Item No.	Part No.	Description	Qty.
1	100097	SCREW, TRUSS HD., 10-32 X 1/2" SST	3
2	333533	COVER, CONTROL CABINET	1
3	114768	DECAL 36" CONTROL CABINET 3-HOLE, PW-W-R (MD66)	1
4	114767	DECAL 36" CONTROL CABINET 2-HOLE, W-R (MD44) (not shown)	1
5	107440	THERMOMETER, 8FT. FLANGE *(Qty. 1 MD44) (Qty. 3 MD66)*	A/R
6	113622	THERMOMETER, 4FT. GAS FILLED *(Qty. 1 MD44 Only)*	1
7	114758	PUSHBUTTON, RED SQUARE	1
8	0512217	HOUSING, SWITCH	2
9	0512216	CONTACT BLOCK, N.O.	2
10	0512218	PUSHBUTTON, GREEN SQUARE	1
11	114506	LIGHT, GREEN LED 24V	1
12	0512922	SWITCH, ON/OFF	1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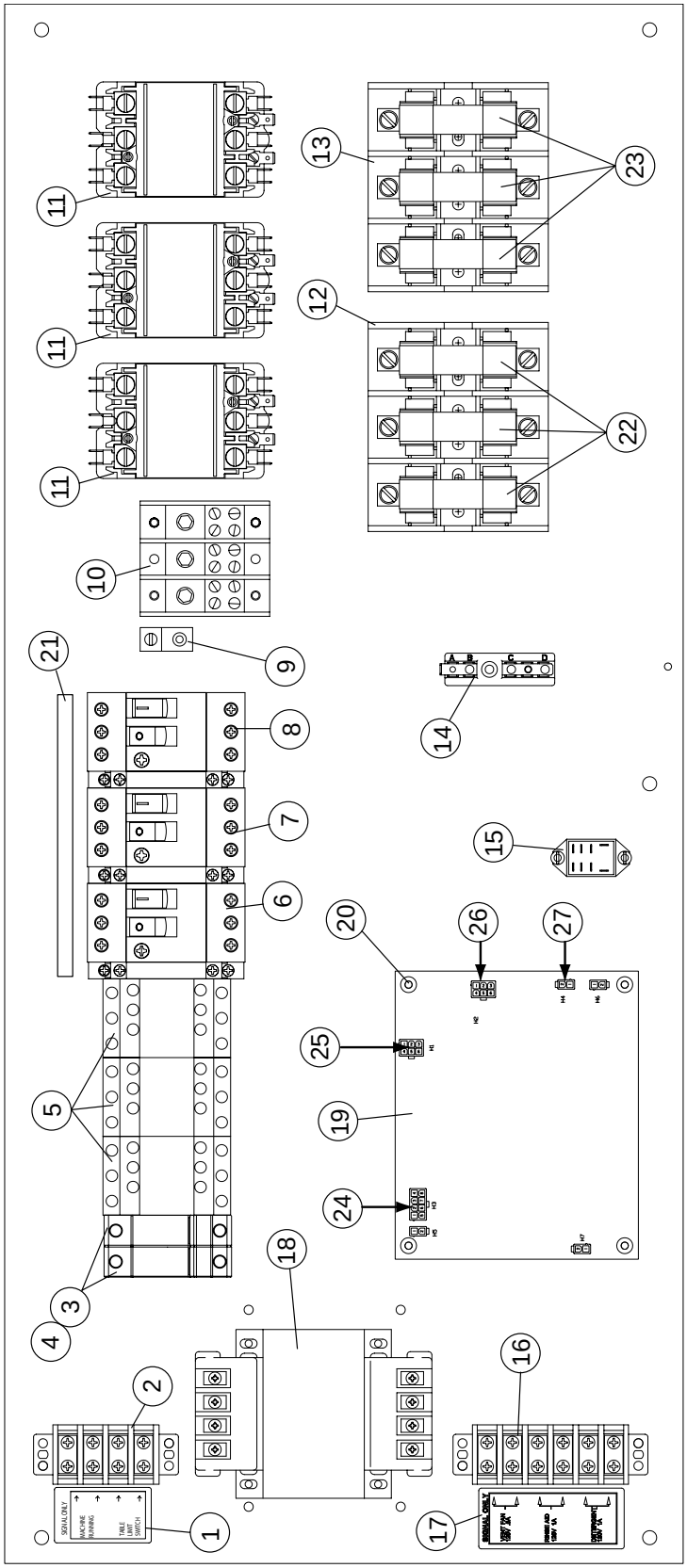
Item No.	Part No.	Description	Qty.
1	100097	SCREW, TRUSS HD., 10-32 X 1/2" SST	3
2	334880	COVER, CONTROL CABINET	1
3	115239	DECAL 36" CONTROL CABINET 3-HOLE, PW-W-R, CH66, I66	1
4	115238	DECAL 36" CONTROL CABINET 2-HOLE, W-R, CH44 (not shown)	1
5	107440	THERMOMETER, 8FT. FLANGE *(Qty. 1 CH44, I44) (Qty. 3 CH66,I66)*	A/R
6	113622	THERMOMETER, 4FT. GAS FILLED *(Qty. 1 CH44, I44 Only)*	1
7	115018	PUSHBUTTON, RED	1
8	115019	PUSHBUTTON, GREEN	1
9	114506	LIGHT, GREEN LED 24V	1
10	114505	BREAKER, 14A, ON/OFF 24V	1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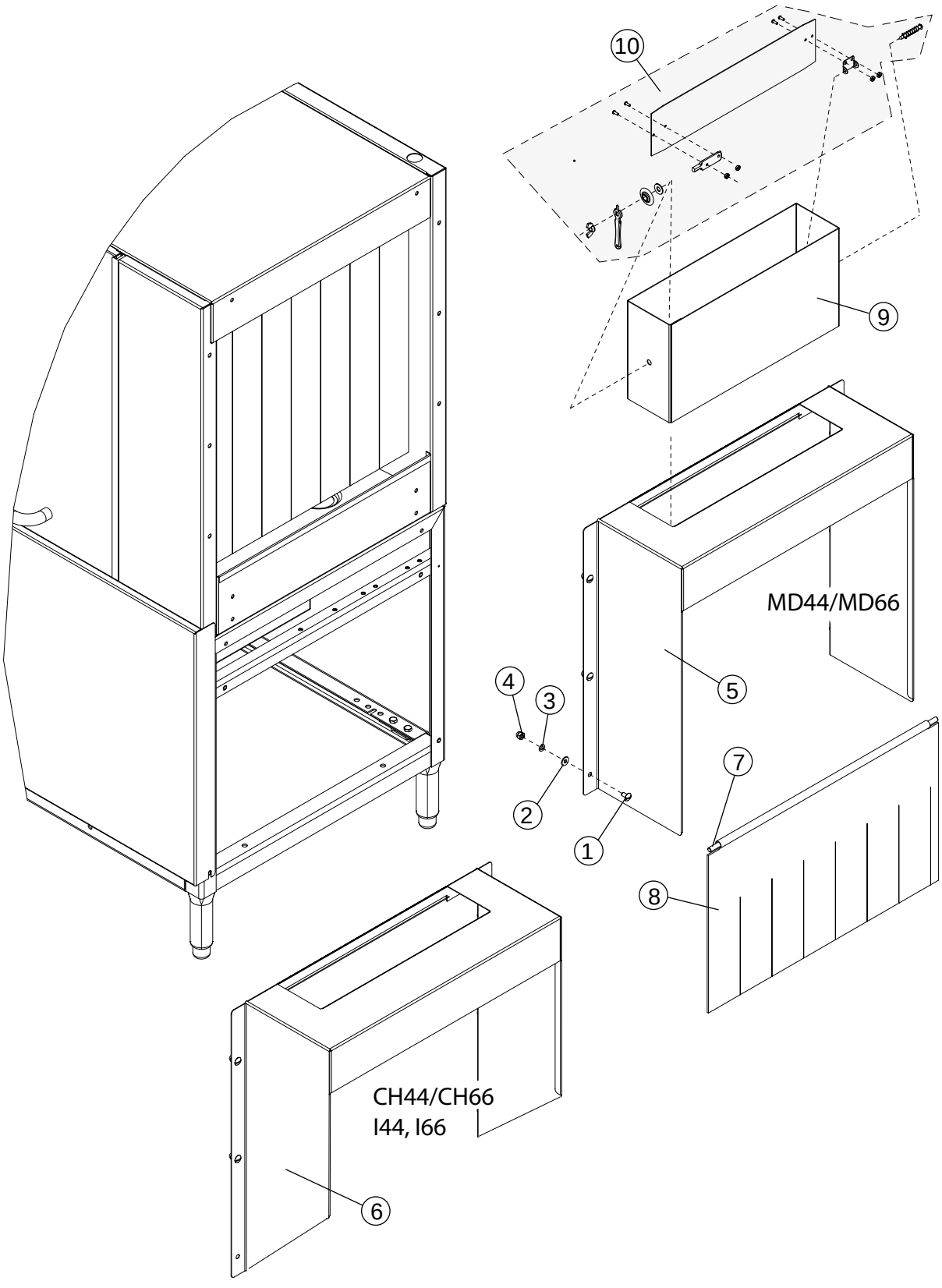
Item No.	Part No.	Description	Qty.
1	113936	LABEL, TABLE LIMIT SWITCH/ MACHINE RUN	1
2	107171	TERMINAL BLOCK, 4-POLE	1
3	111153	FUSE BLOCK, 600V 30A	2
4	112482	FUSE, 3.5A, LPCC 200-220-230-240/60/3	2
–	114797	FUSE, 2.0A, LPCC 460-480/60/3	2
5	108122	CONTACTOR, MTR. 12A (Qty. 2 for MD44, Qty. 3 for MD66)	A/R
6	111624	OVERLOAD, MTR. 200-220-230-240/60/3 (0.63-1.0A) Drive	1
–	111623	OVERLOAD, MTR. 460-480/60/3 (0.4-.63A) Drive	1
7	111629	OVERLOAD, MTR. 200-220-230-240/60/3 (6-10A) Prewash MD66	1
–	111627	OVERLOAD, MTR. 460-480/60/3 (2.5-4.0A) Prewash MD66	1
8	111629	OVERLOAD, MTR. 200-220-230-240/60/3 (6-10A) Wash	1
–	111627	OVERLOAD, MTR. 460-480/60/3 (2.5-4.0A) Wash	1
9	103310	LUG, GROUND	1
10	111833	BLOCK, TERMINAL 175A, 3-POLE	1
11	111827	CONTACTOR, HEAT 60A (Qty. 2 for 40°Rise, Qty. 3 for 70°)	A/R
12	180171	FUSE BLOCK, 600V/60A 200-220-230-240-460-480V WASH	1
13	180171	FUSE BLOCK 600V/60A 3P J-TYPE FOR 40°RISE BOOSTER	1
–	108424	FUSE BLOCK 600V/100A 3P T-TYPE FOR 70° RISE BOOSTER	1
14	0503749	TERMINAL BLOCK, 11-POLE	1
15	111068	RELAY, 2 POLE 120V	1
16	100294	TERMINAL BLOCK, 6-POLE	1
17	114760	LABEL, DETERGENT/RINSE AID/VENT FAN	1
18	109064	TRANSFORMER, 250VA 200-220-230-240-460-480:120V	1
19	114756	RACK CONTROL MODULE	1
20	114759	SUPPPORT, PCB	4
21	111633	BUS SYSTEM (2-UNIT) FOR CH44,MD44	1
–	111671	BUS SYSTEM (3-UNIT) FOR CH66, MD66	1
22	180175	FUSE, 600V/50A J-TYPE 200-220V/50-60/3	3
–	180174	FUSE, 600V/45A J-TYPE 230-240/50-60/3	3
–	180243	FUSE, 600V/25A J-TYPE 460-480/60/3	3
23	180176	FUSE, 600V/60A J-TYPE 200-220V/50-60/3 40°Rise Booster	3
–	180175	FUSE, 600V/50A J-TYPE 230-240V/50-60/3 40°Rise Booster	3
–	180243	FUSE, 600V/25A J-TYPE 460-480V/60/3 40°Rise Booster	3
–	108448	FUSE, 600V/90A T-TYPE 200-220V/50-60/3 70°Rise Booster	3
–	180059	FUSE, 600V/80A T-TYPE 230-240V/50-60/3 70°Rise Booster	3
–	180173	FUSE, 600V/40A J-TYPE 460-480V/60/3 70°Rise Booster	3
24	114771	WIRE HARNESS, MOLEX 8-PIN INPUT	1
25	114769	WIRE HARNESS, MOLEX 6-PIN INPUT	1
26	114770	WIRE HARNESS, MOLEX 6-PIN OUTPUT	1
27	114772	WIRE HARNESS, MOLEX 6-PIN OUTPUT HEAT	1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MD44/MD66
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CH44/CH66
I44, I66
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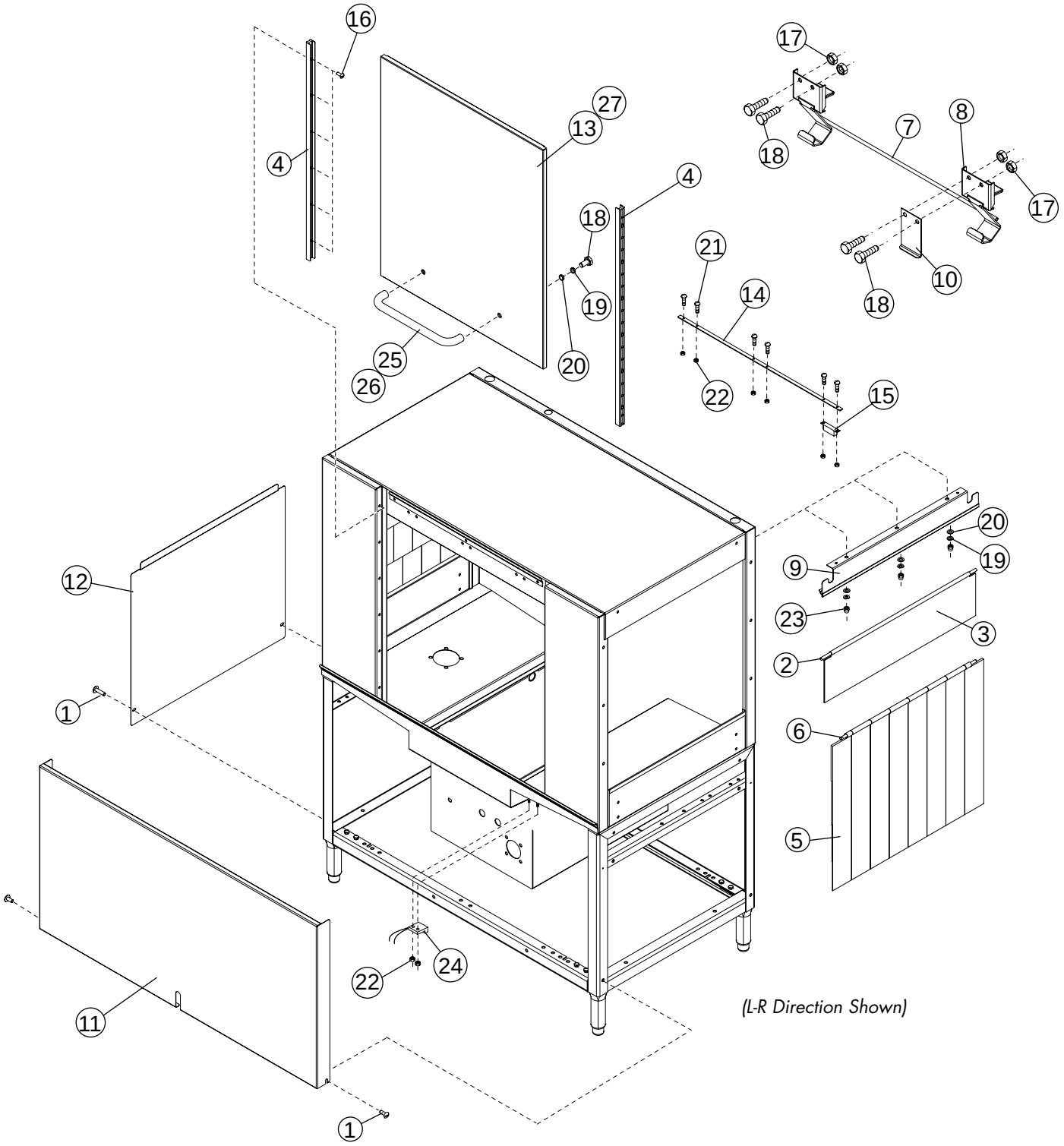
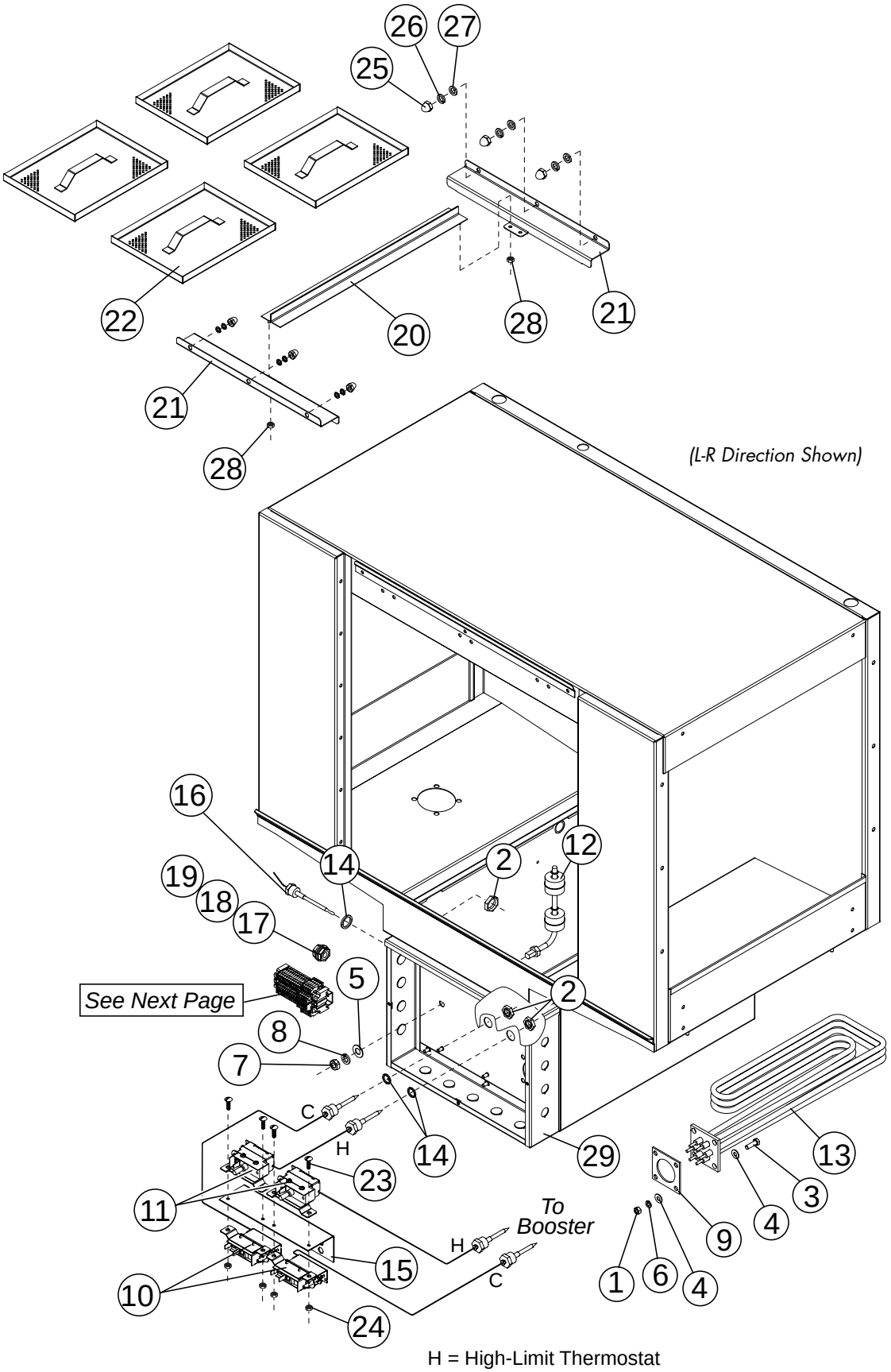
Item No.	Part No.	Description	Qty.
1	100073	SCREW, 1/4-20 X 1/2" TRUSS HD., SST	6
2	106026	WASHER, 1/4" FLAT	6
3	106482	WASHER, LOCK 1/4" SPLIT	6
4	106014	NUT, ACORN 1/4-20	6
5	333092	SPLASH SHIELD, VENT 8" EXTENDED (MD44, MD66)	1
6	334917	SPLASH SHIELD, VENT 8" EXTENDED (CH44, CH66, I44, I66)	1
7	113828	ROD, CURTAIN 5/16" X 21-1/2" SST	1
8	114622	CURTAIN, 21-3/4" X 13-1/4"	1
9	401487	VENT STACK 4" X 16"	1
10	201589	DAMPER REGULATOR ASSY.	1



(L-R Direction Shown)

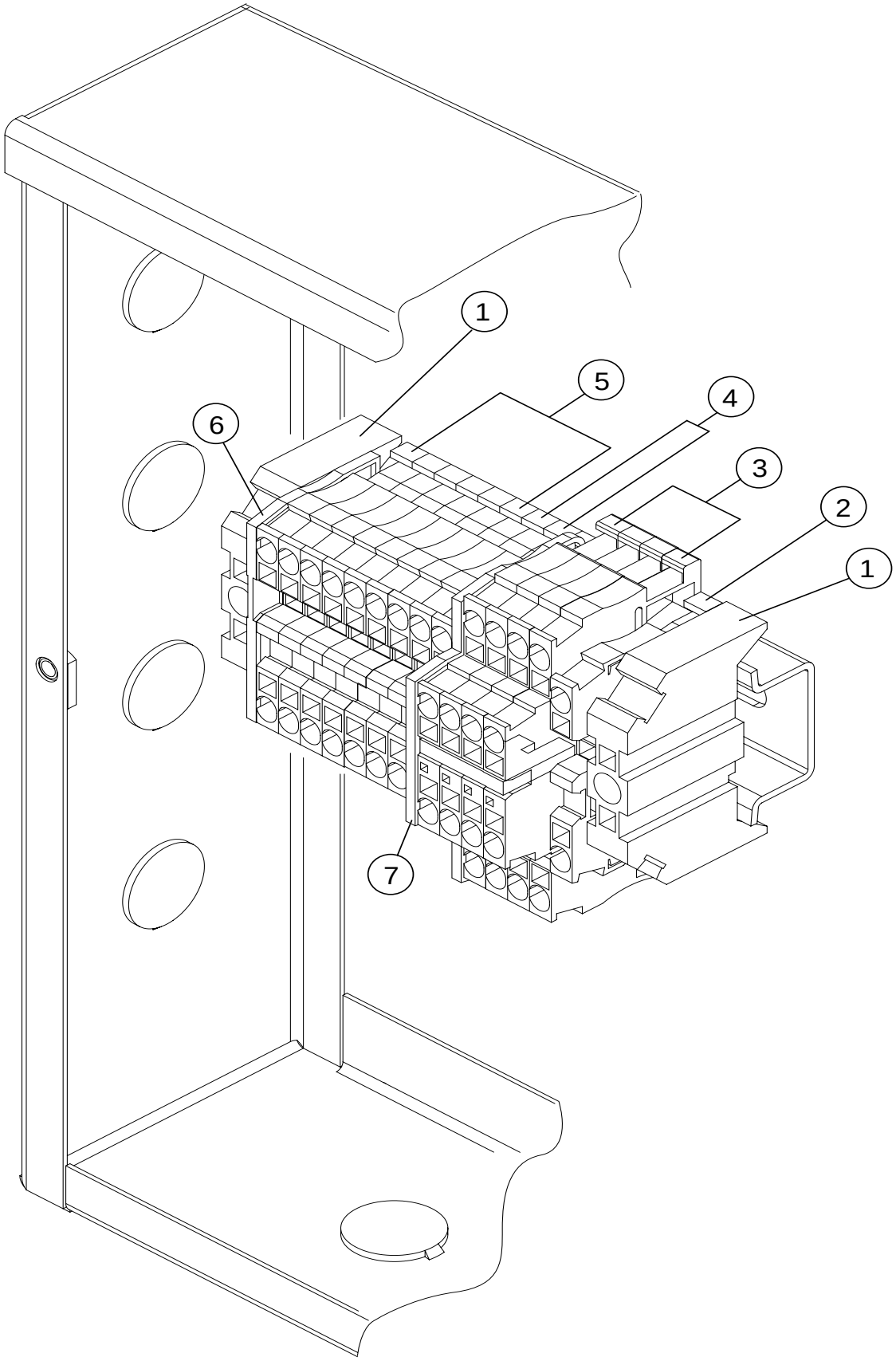
Item No.	Part No.	Description	Qty.
1	100212	SCREW, 10-32 X 3/4" TRUSS HD.	4
2	108250	ROD, CURTAIN	1
3	109723	CURTAIN, 24" X 6-1/4" (RINSE CURTAIN)	1
4	113691	GUIDE, U-CHANNEL, DOOR	2
5	113720	CURTAIN, 24" X 20-1/4"	2
6	113828	ROD, CURTAIN, 5/16" DIA. X 21-1/2" LG.	2
7	308133	BRACKET, DOOR HOOK	1
8	317345	BRACKET, DOOR CATCH	2
9	328023	BAFFLE, CURTAIN WELDMENT	1
10	331981	BRACKET, DOOR STOP	1
11	333163	PANEL, FRONT 44" MT-RACK	1
12	333539	PANEL, END, FULL MT-RACK	1
13	333267	DOOR, 26" (MD44)	1
14	329985	BRACKET, WATER DIVERTER	1
15	113937	MAGNET, DOOR	1
16	113486	SCREW, 8-32 X 5/8" FLAT HD., SST	12
17	100141	NUT, GRIP 1/4-20 SST	4
18	100734	BOLT, 1/4-20 X 1/2" SST	6
19	106482	WASHER, LOCK 1/4" SPLIT	5
20	106026	WASHER, 1/4" FLAT	5
21	106382	SCREW, 6-32 X 3/8" TRUSS HD., SST	6
22	108954	GRIP NUT, 6-32 W/NYLON INSERT, SST	8
23	106014	NUT, ACORN 1/4-20	3
24	113719	SWITCH, REED ALEPH	1
25	114798	HANDLE, DOOR (MD-44)	1
26	108966	HANDLE, DOOR (CH-44, I-44)	1
27	327857	DOOR, 26" (CH-44, I-44)	1



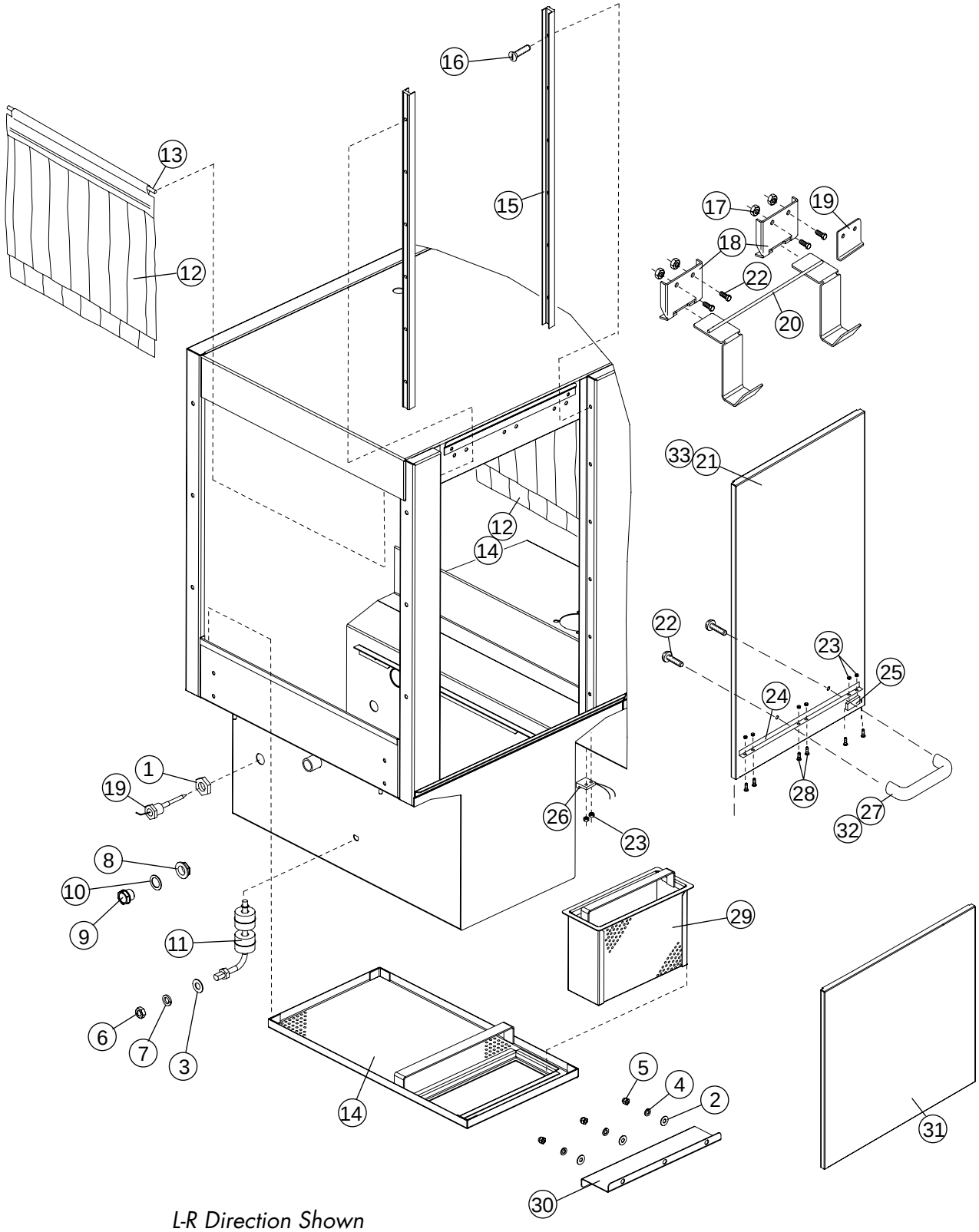
H = High-Limit Thermostat
C = Control Thermostat

Item No.	Part No.	Description	Qty.
1	100154	HEX PLAIN NUT, 5/16-18 SST	4
2	100547	LOCKNUT, 1/2" NPT SST	3
3	100740	BOLT, HEX HD., 5/16-18 X 1" SST	4
4	102376	WASHER, FLAT 5/16", SST	8
5	104882	WASHER, FLAT SST	1
6	106013	WASHER, LOCK 5/16" SPLIT	4
7	107089	HEX PLAIN JAM NUT, 1/2-13 SST	1
8	107589	WASHER, LOCK 1/2" SPLIT SST	1
9	108345	GASKET, HEATER	1
10	109069	THERMOSTAT, CONTROL WITH CAPILLARY	2
11	110561	THERMOSTAT, HIGH LIMIT WITH CAPILLARY	2
12	113291	FLOAT SWITCH	1
–	111151	C-CLIP	4
13	113516	HEATER, 15/18.1kW 200-220V/50-60/1 & 3PH 380V/50-60/3	1
–	113517	HEATER, 15/16.3kW 230-240V/50-60/1 & 3PH 400-415V/50-60/3	1
–	113518	HEATER, 15/16.3kW 460-480V/60/3	1
14	201041	WASHER, SPACER	3
15	323430	BRACKET, THERMOSTAT	1
16	107440	THERMOMETER, 8 FT. FLANGED	1
17	108418	PLUG, 1/2" NPT PLASTIC	1
18	108417	NUT, 1/2" NPT PLASTIC	1
19	109034	GASKET, 1/2" PLUG	1
20	305163	SCREEN SUPPORT WELDMENT	1
21	333078	FILLER, SCREEN	2
22	305164	SCREEN, SCRAP WELDMENT	4
23	100097	SCREW, 10-32 X 1/2" TRUSS HD.	2
24	107966	NUT, GRIP 10-32 W/NYLON INSERT	2
25	106014	NUT, ACORN 1/4-20	6
26	106482	WASHER, LOCK 1/4" SPLIT	6
27	106026	WASHER, FLAT 1/4"	6
28	100141	NUT, GRIP 1/4-20 SST	2
29	333088	ENCLOSURE WELDMENT, 3.25" X 12" X 16"	1

Wash Tank Junction Box Terminal Block - All Models

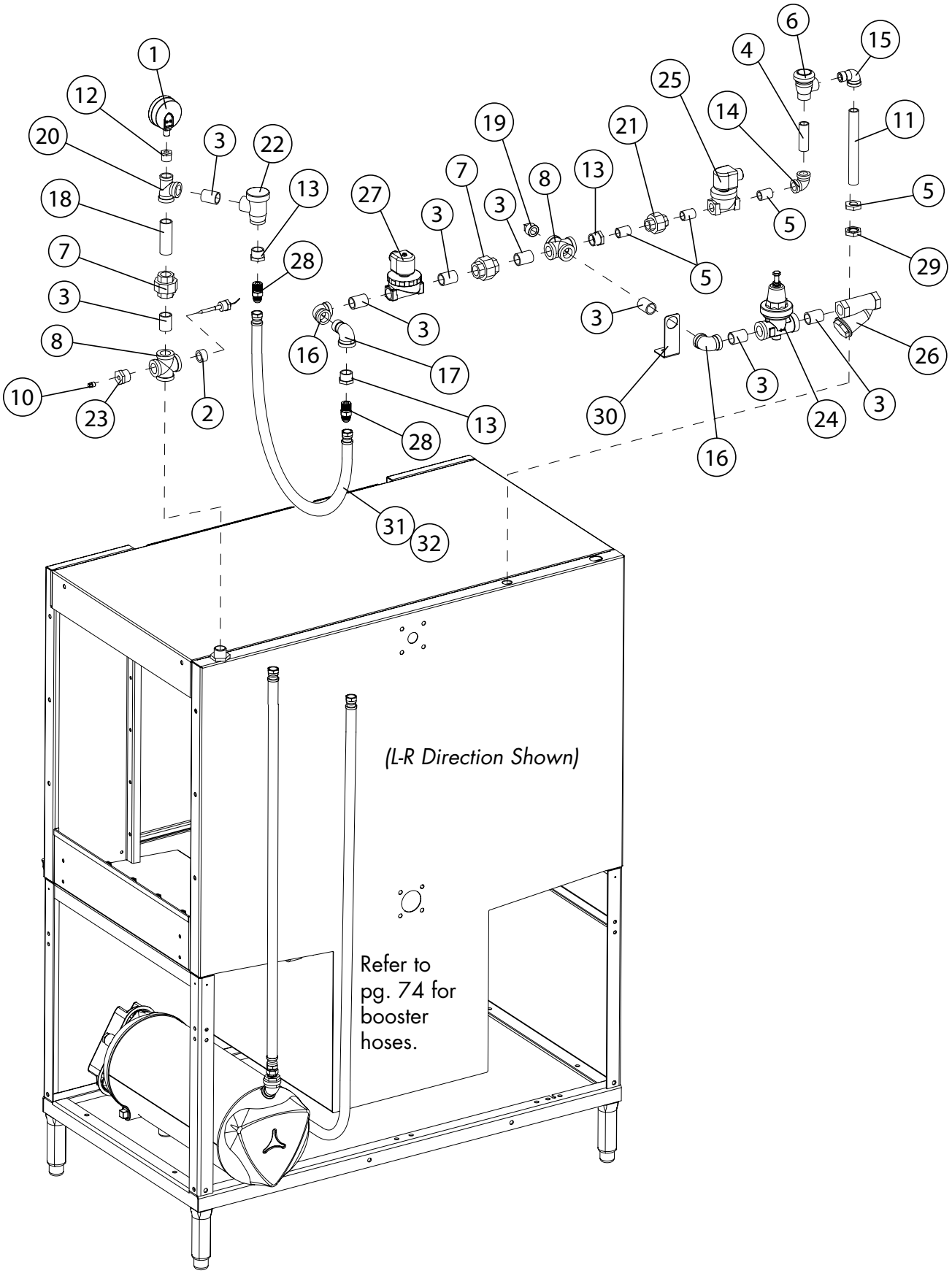


Item No.	Part No.	Description	Qty.
1	114519	END BLOCK, E/NS 35N	2
2	114514	TERMINAL, SINGLE, ST 2.5 WH (WHITE)	1
3	114517	TERMINAL, DOUBLE STTB 2.5	4
4	114512	TERMINAL, SINGLE ST 2.5 (GRAY)	2
5	114513	TERMINAL, SINGLE, ST 2.5 BU (BLUE)	6
6	114516	END COVER, SINGLE TERMINAL D-ST 2.5	1
7	114518	END COVER, DOUBLE TERMINAL D-STTB 2.5	1



L-R Direction Shown

Item No.	Part No.	Description	Qty.
1	100547	LOCKNUT, 1/2" NPT SST	1
2	102376	WASHER, FLAT 5/16"	3
12	108250	ROD, CURTAIN, 5/16" DIA. x 24-5/8" LG.	1
3	104882	WASHER, FLAT .531" X 1.06" X .062"	1
4	106013	WASHER, LOCK 5/16" SPLIT SST	3
5	106014	HEX ACORN PLAIN NUT, 1/4-20 SST	3
6	107089	HEX PLAIN JAM NUT, 1/2-13 SST	1
7	107589	WASHER, LOCK, 1/2" SPLIT SST	1
8	108417	LOCKNUT, 1/2" NPT PLASTIC	1
9	108418	LOCKNUT, 1/4: PLASTIC	1
10	109034	GASKET (1/2" PLLUG)	1
11	110854	FLOAT SWITCH, RACK MACHINE	1
12	113720	CURTAIN, 24" X 20-1/4"	2
13	113828	ROD, CURTAIN, 5/16" DIA. X 21-1/2" LG.	1
14	333645	SCREEN WELDMENT, PREWASH (CH66, i66, MD66)	1
15	113691	GUIDE, U-CHANNEL, DOOR	2
16	113486	SCREW, 8-32 X 5/8" FLAT HD., SST	12
17	100141	NUT, GRIP 1/4-20 SST	4
18	317345	BRACKET, DOOR CATCH	2
19	331981	BRACKET, DOOR STOP	1
20	308133	BRACKET, DOOR HOOK	1
21	333656	DOOR, 15" PREWASH	1
22	100734	BOLT, 1/4-20 X 1/2" SST	6
23	108954	GRIP NUT, 6-32 W/NYLON INSERT, SST	8
24	329985	BRACKET, WATER DIVERTER	1
25	113937	MAGNET, DOOR	1
26	113719	SWITCH, REED ALEPH	1
27	114798	HANDLE, DOOR (MD44)	1
28	106382	SCREW, 6-32 X 1/2" TRUSS HD., SST	6
29	333709	REFUSE BASKET WELDMENT, MD66	1
30	333792	SCREEN FILLER, FRT PW MD66	1
31	333539	PANEL, FULL END	1
32	108966	HANDLE, DOOR (CH66, i66)	1
33	327952	DOOR, 15" PREWASH (CH66, i66)	1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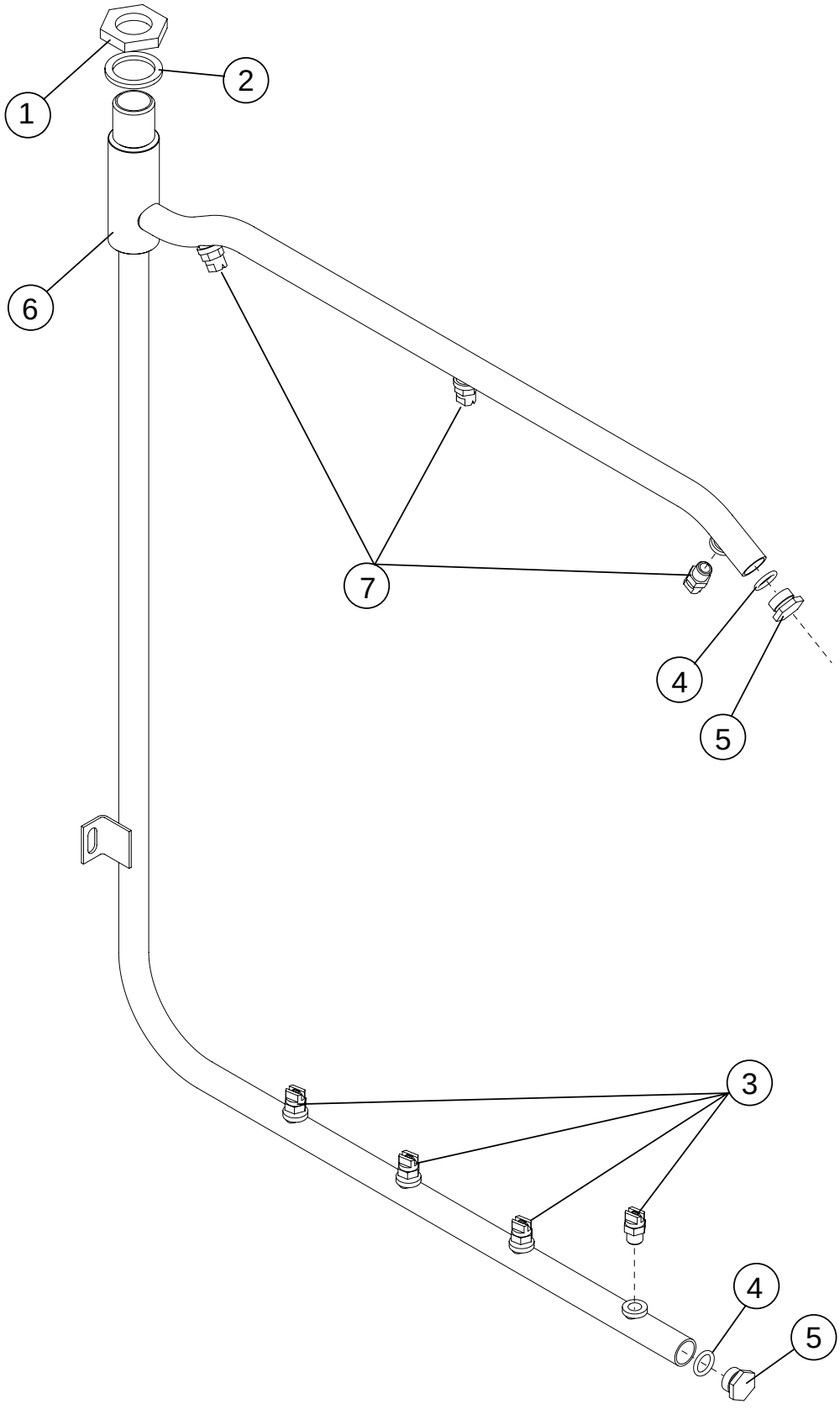
(L-R Direction Shown)
Refer to pg. 74 for booster hoses.

Item No.	Part No.	Description	Qty.
1	100135	GAUGE, PRESSURE 0-60 PSI	1
2	100171	BUSHING, RED. FACE 3/4" X 1/2" BRASS	1
3	100184	NIPPLE, 3/4" NPT X CLOSE BRASS	8
4	100206	NIPPLE, 1/2" NPT X 2-1/2" LG. BRASS	1
5	100209	NIPPLE, 1/2" NPT X CLOSE BRASS	3
6	100500	VACUUM BREAKER, 1/2" NPT BRONZE	1
–	900836	KIT, REPAIR 1/2" VACUUM BREAKER	A/R
7	100571	UNION, 3/4" NPT BRASS	2
8	100599	CROSS, 3/4" NPT BRASS	2
9	100709	LOCKNUT, 1/2" NPT BRASS	1
10	101259	PLUG, 1/8" NPT SQ. HEAD BRASS	1
11	101397	NIPPLE, RTOE, 1/2" NPT X 7" LG. BRASS	1
12	102388	BUSHING, REDUCING 1/2" NPT X 1/4" NPT BRASS	1
13	102392	BUSHING, REDUCING, 3/4" NPT X 1/2" NPT BRASS	3
14	102435	ELBOW, 1/2" NPT X 90° BRASS	1
15	102438	ELBOW, STREET, 1/2" NPT X 90° BRASS	1
16	102442	ELBOW, 3/4" NPT X 90° BRASS	2
17	102444	ELBOW, STREET, 3/4" NPT X 90° BRASS	1
18	102470	NIPPLE, 3/4" NPT 3" LG. BRASS	1
19	102505	PLUG, 3/4" NPT, SQ. HEAD BRASS	1
20	102525	TEE, RED, 3/4" X 1/2" X 3/4" NPT BRASS	1
21	102549	UNION, 1/2" NPT BRASS	1
22	104429	VACUUM BREAKER, 3/4" BRASS	1
–	900837	KIT, REPAIR VACUUM BREAKER 3/4"	A/R
23	105976	BUSH, RED, 3/4" X 1/8" BRASS	1
24	107550	VALVE, PRESSURE REGULATING 3/4" NPT BRONZE	1
25	109886	VALVE, SOLENOID, 1/2" NPT, HW PARKER	1
–	109902	KIT, REPAIR SOLENOID 1/2" HW	A/R
–	108516	COIL, SOLENOID, 1/2" HW, 120VAC	A/R
26	110768	STRAINER, LINE 3/4" NPT BRONZE	1
27	111437	VALVE, SOLENOID 3/4" NPT HW	1
–	109903	KIT, REPAIR 3/4" SOLENOID VALVE	A/R
–	111472	COIL, SOLENOID 3/4" 120VAC	A/R
28	115101	CONNECTOR, MALE, 1/2" NPT X 1/2" 37° FLARE BRASS	2
29	201029	LOCKNUT, 1/2" NPT NP	1
30	333654	BRACKET, FILL PIPING SUPPORT	1
31	419009	FILL HOSE ASSY 1/2" ID X 22" LG FLARE JIC (For L-R machines without booster)	1
32	419005	FILL HOSE ASSY 1/2" ID X 60" LG FLARE JIC (For R-L machine without booster)	1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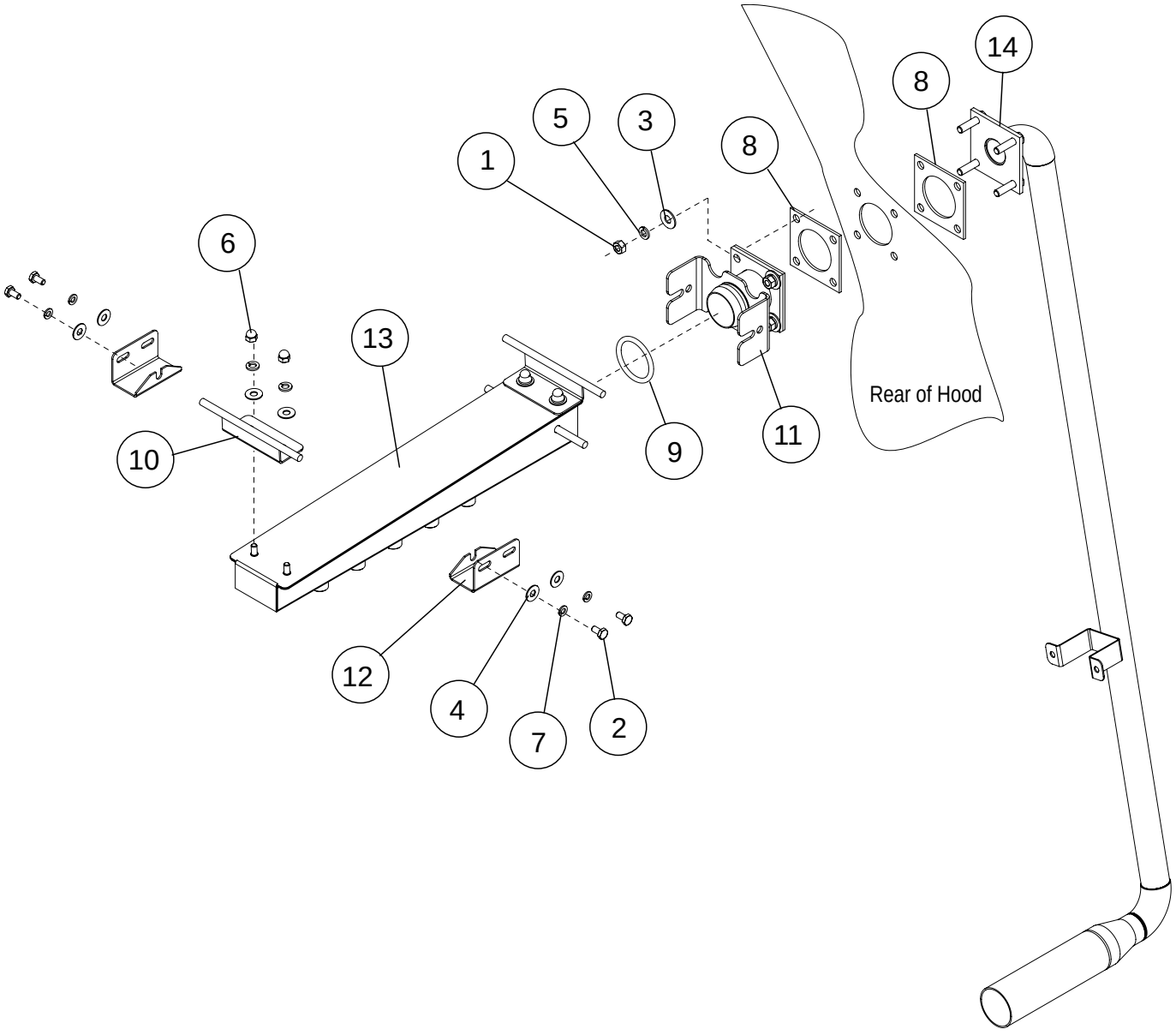
Item No.	Part No.	Description	Qty.
1	100156	LOCKNUT, 3/4" BRASS	1
2	108620	GASKET, RINSE MANIFOLD, 3/4" PIPING	1
3	111203	NOZZLE, VEE-JET #8003	4
4	113716	WASH ARM ORING	2
5	113795	PLUG, E FINAL RINSE MANIFOLD	2
6	114842	MANIFOLD, WELDMENT FINAL RINSE MD-RACK	1
7	0507451	NOZZLE, RINSE SS H-1/8-W-SS 8006	3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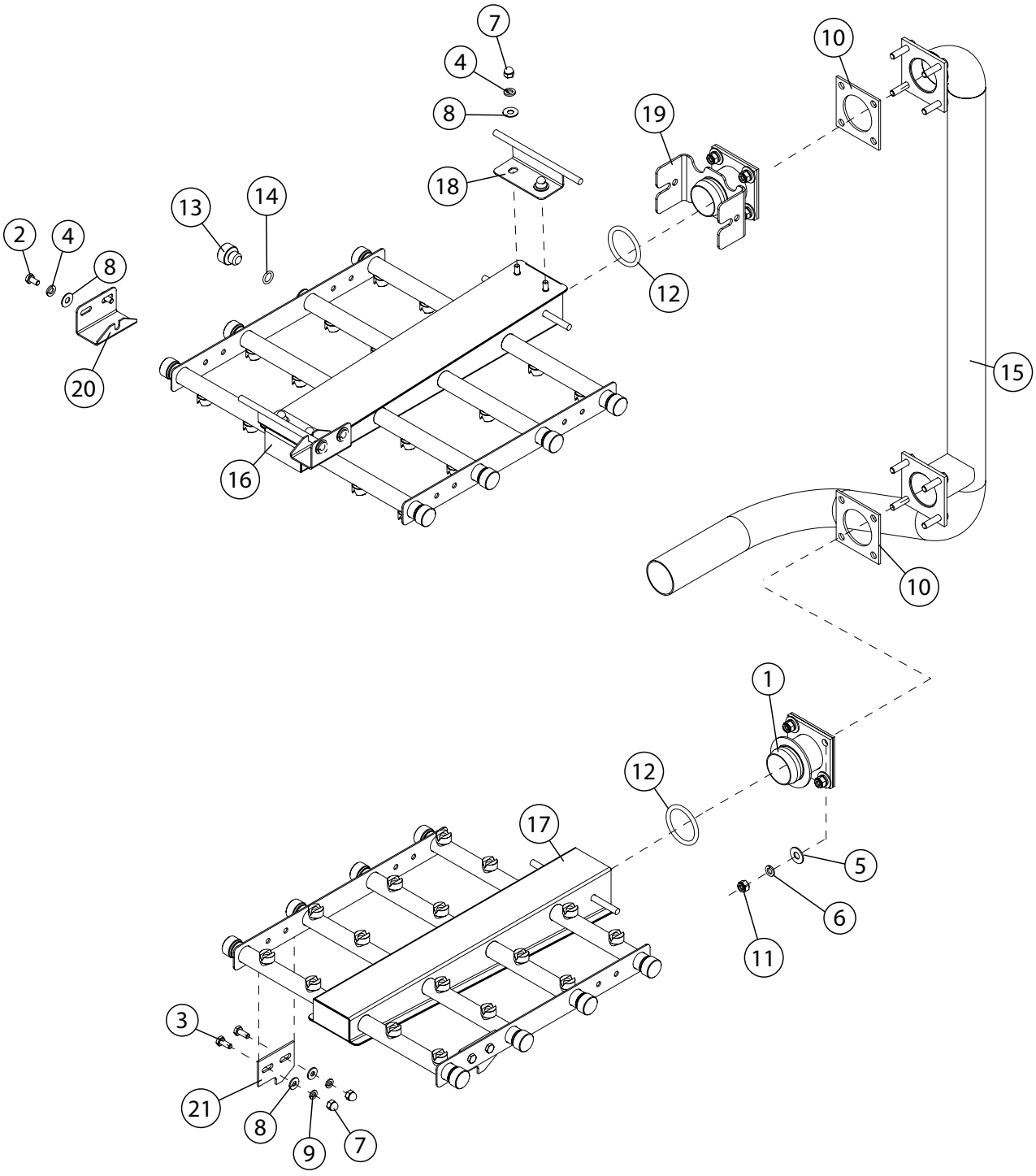
Item No.	Part No.	Description	Qty.
1	100154	HEX PLAIN NUT, 5/16-18 SST	4
2	100734	BOLT, HEX HEAD, 1/4-20 X 1/2" SST	4
3	102376	WASHER, FLAT 5/16" SST	4
4	106026	WASHER, FLAT 1/4" SST	4
5	106013	WASHER, LOCK 5/16" SST	4
6	106014	HEX ACORN PLAIN NUT, 1/4-20 SST	4
7	106482	WASHER, LOCK 1/4" SPLIT SST	4
8	108345	GASKET, HEATER/STANDPIPE	2
9	111532	O-RING	1
10	333105	UPPER WASH SUPPORT ROD WELDMENT, MT-RACK	2
11	333460	FLANGE WELDMENT, WASH SYS. CONN. MT-RACK	1
12	333566	BRACKET, UPPER WASH ADJUSTMENT MT-RACK	2
13	418238-S	MANIFOLD TAPER ASSY. UPPER WASH	1
14	333712	STANDPIPE WELDMENT, 1-1/4" OD MD66	1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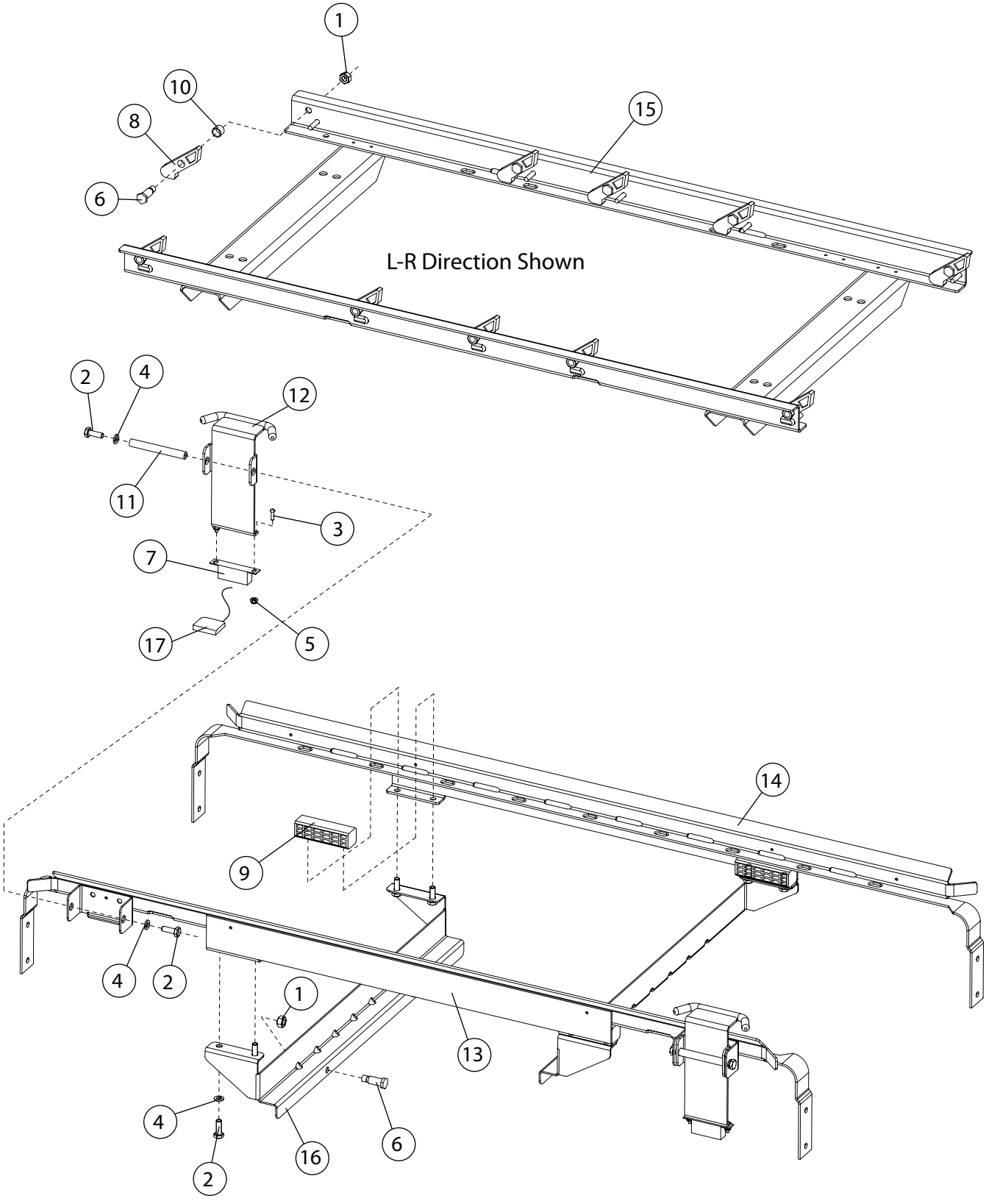
Item No.	Part No.	Description	Qty.
1	334979	FLANGE WELDMENT, LOWER WASH	1
2	100734	BOLT, HEX HEAD, 1/4-20 X 1/2" SST	4
3	100735	BOLT, HEX HEAD, 1/4-20 X 5/8" SST	4
4	102376	WASHER, FLAT 5/16" SST	8
5	104618	WASHER, FLAT 3/8" SST	8
6	106013	WASHER, LOCK 5/16" SPLIT SST	8
7	106014	HEX ACORN PLAIN NUT, 1/4-20 SST	16
8	106026	WASHER, FLAT 1/4" SST	8
9	106482	WASHER, LOCK 1/4" SPLIT SST	4
10	108345	GASKET, HEATER/STANDPIPE	2
11	109009	HEX GRIP NUT, 5/16-18 SST W/NYLON	8
12	111532	O-RING	2
13	113555	THREADED PLUG, WASH ARM	16
14	113716	WASH-ARMS O-RING	16
15	333096	STANDPIPE WELDMENT 44" MT-RACK	1
16	417963-S	MANIFOLD TAPER ASSEMBLY, UPPER	1
17	333102	MANIFOLD TAPER ASSEMBLY, LOWER	1
18	333105	UPPER WASH SUPPORT ROD WELDMENT, MT-RACK	2
19	333460	FLANGE WELDMENT, WASH SYS. CONN. MT-RACK	2
20	333566	BRACKET, UPPER WASH ADJUSTMENT MT-RACK	2
21	334977	BRACKET, LOWER WASH, LATCH	2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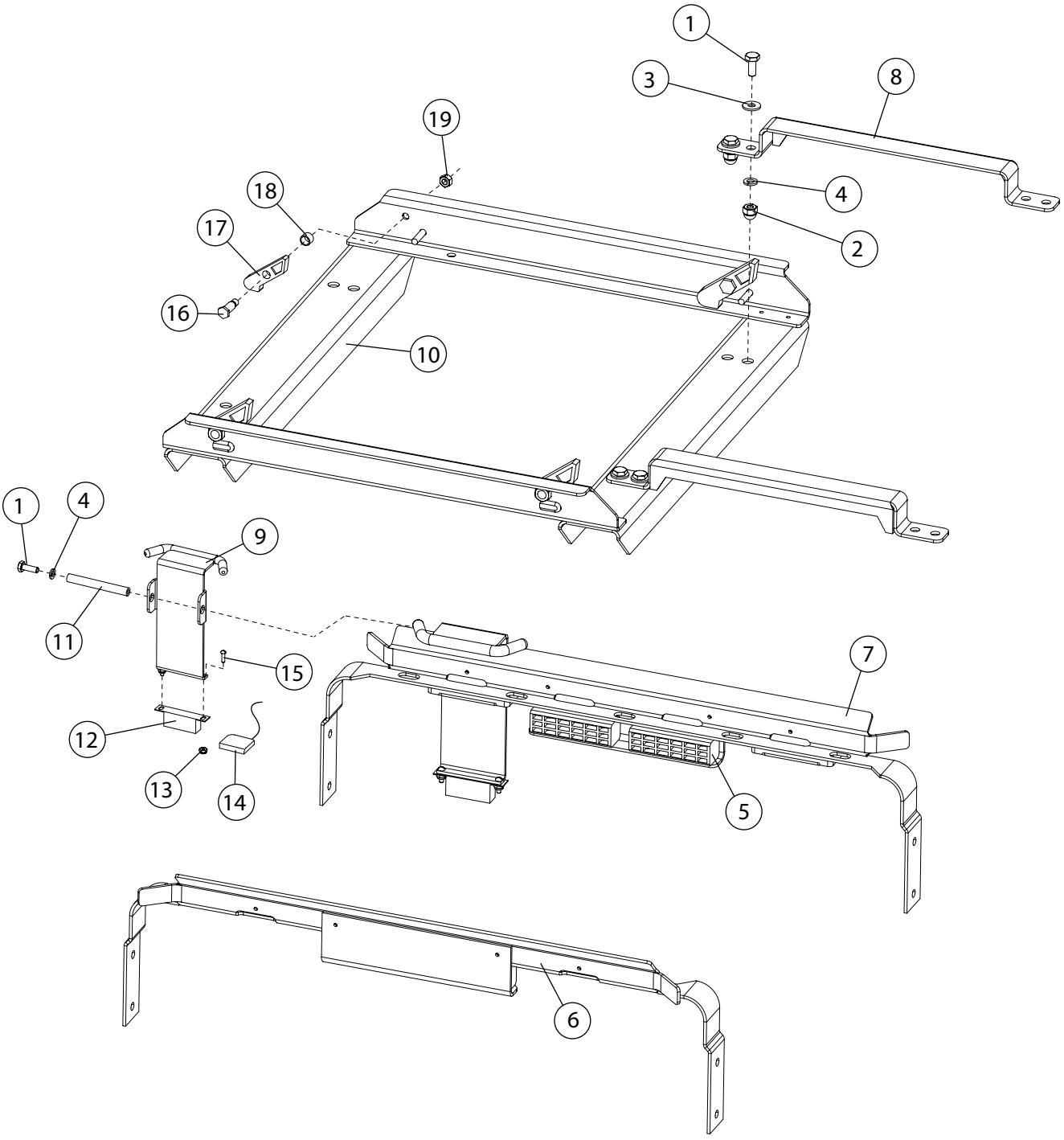
Item No.	Part No.	Description	Qty.
1	100142	HEX GRIP NUT, 5/16-18 SST CTR LOCK	12
2	100734	BOLT, HEX HEAD 1/4-20 X 1/2" SST	12
3	100764	SCREW, ROUND HD., 6/32 X 1/2" SST	4
4	106482	WASHER, LOCK 1/4" SPLIT SST	12
5	108954	HEX, GRIP NUT, 6-32 SST W/NYLON INSERT	4
6	113692	BOLT SHOULDER, 3/8" X 3/4" X 5/16-18 X 3/8"	12
7	113937	MAGNET, REED SWITCH	2
8	204513	PAWL, CRADLE	10
9	206343	BEARING, E CRADLE SUPPORT	4
10	206345	SPACER, E CRADLE	10
11	327833	PIN, IDLE PUMP SWITCH	2
12	333094	SWITCH, WELDMENT	2
13	334919	TRACK WELDMENT, FRONT 44"	1
14	334920	TRACK WELMENT, REAR 44"	1
15	334922	CRADLE, WELDMENT 44"	1
16	334923	TRACK, LOWER WASH SUPPORT	2
17	113719	SWITCH, REED	2
—	419065	CRADLE ASSY COMPLETE (INCLUDES ITEMS 1, 6, 8, 10, 15)	1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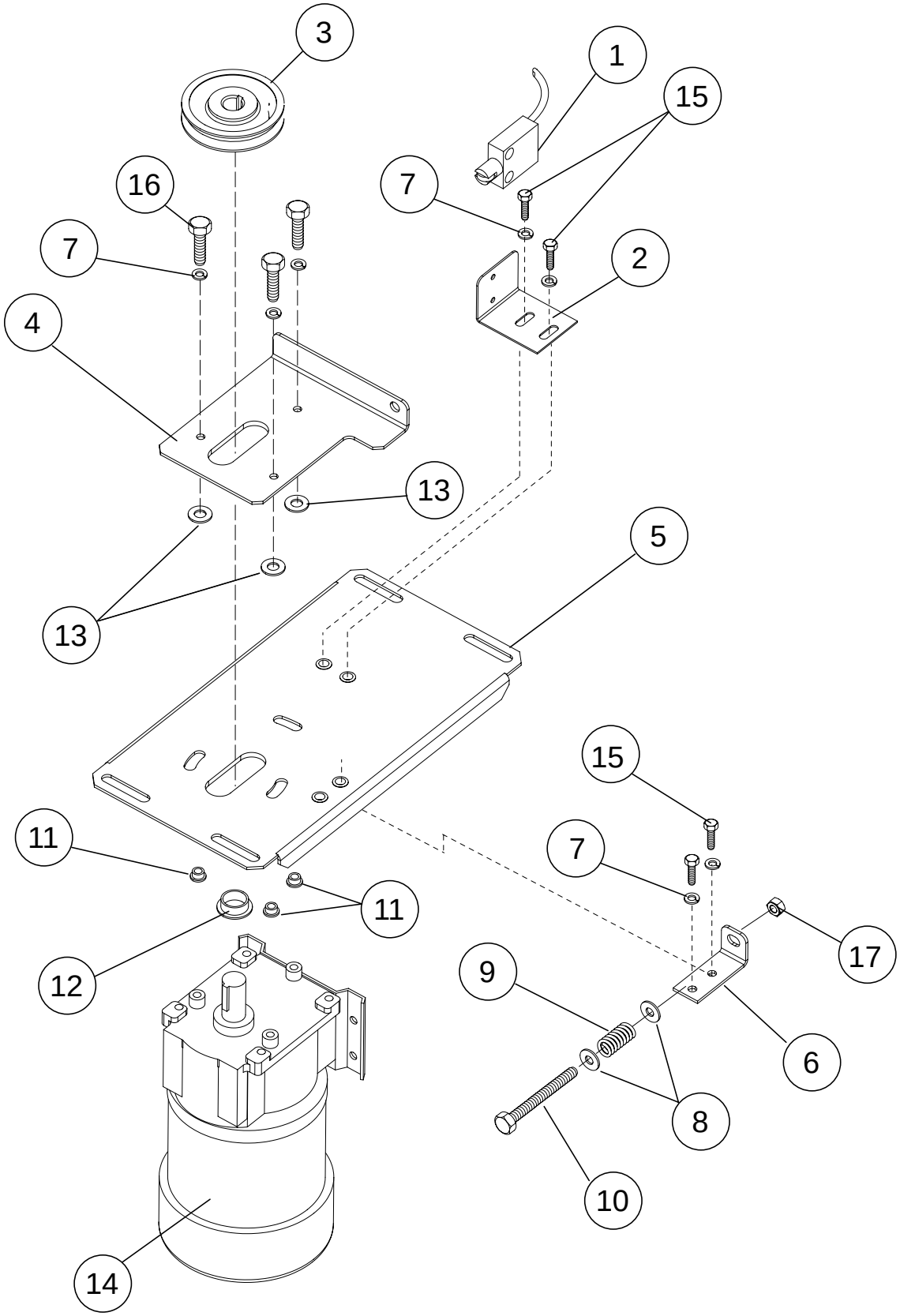
Item No.	Part No.	Description	Qty.
1	100735	BOLT, HEX HEAD 1/4-20 X 5/8" SST	4
2	106014	HEX ACORN PLAIN NUT 1/4-20 SST	4
3	106026	WASHER, FLAT 1/4" SST	4
4	106482	WASHER, LOCK 1/4" SPLIT SST	4
4	100764	SCREW, ROUND HD., 6/32 X 1/2" SST	4
5	206343	BEARING, E CRADLE SUPPORT	4
6	334971	TRACK WELDMENT, FRONT PW 66"	1
7	334972	TRACK WELDMENT, REAR PW 66"	1
8	334976	BRACKET, CRADLE CONNECTOR	2
9	333094	SWITCH, WELDMENT	1
10	334973	CRADLE, WELDMENT PW 66"	1
11	327833	PIN, IDLE PUMP SWITCH	1
12	113937	MAGNET, REED SWITCH	1
13	108954	HEX, GRIP NUT, 6-32 SST W/NYLON INSERT	2
14	113719	SWITCH, REED	1
15	100764	SCREW, ROUND HD., 6/32 X 1/2" SST	2
16	113692	BOLT SHOULDER, 3/8" X 3/4" X 5/16-18 X 3/8"	4
17	204513	PAWL, CRADLE	4
18	206345	SPACER, E CRADLE	4
19	100142	HEX GRIP NUT, 5/16-18 SST CTR LOCK	4
–	419098	CRADLE ASSY, COMPLETE (INCLUDES iTEMS 10, 16,17, 18, 19)	1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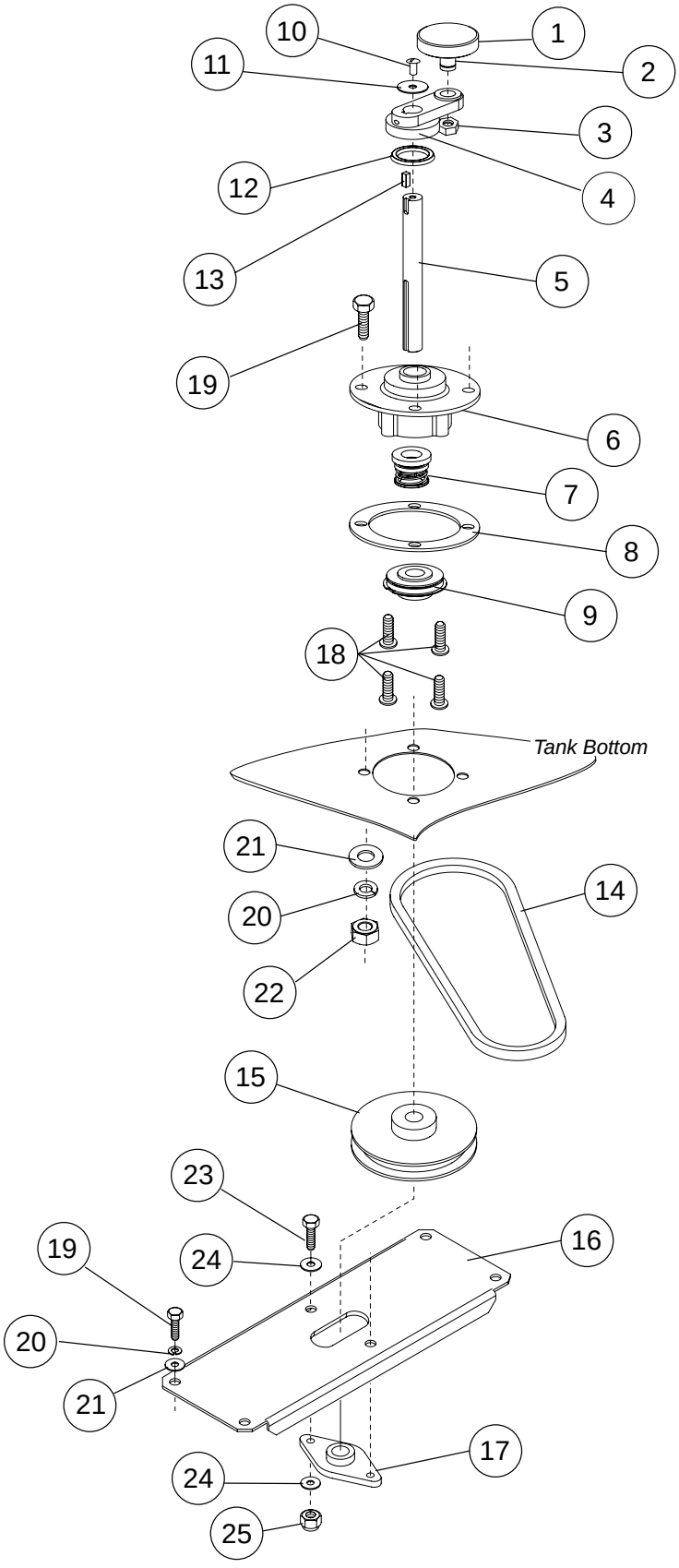
Item No.	Part No.	Description	Qty.
1	0509199	DRIVE MOTOR SWITCH	1
2	327918	BRACKET, MOTOR SWITCH MOUNTING	1
3	113893	SHEAVE, MOTOR AK51, 5/8" BORE	1
4	327916	PLATE, DRIVE MOTOR TORQUE	1
5	327920	BRACKET, 44 MOTOR ASSY. MOUNTING	1
6	327919	BRACKET, MOTOR SPRING MOUNTING	1
7	106482	WASHER, LOCK 1/4" SPLIT SST	4
8	102376	WASHER, FLAT 5/16" SST	2
9	113702	SPRING, 0.06" OD X 0.095" WIRE X 1.5" LG.	1
10	113704	BOLT, HEX HEAD, 5/16-18 X 3-1/2"	1
11	113701	BUSHING, FLANGE 1/4" X 3/8" X 1/4" LG. BRONZE OIL	1
12	113703	BUSHING, FLANGE 5/8" X 7/8" X 3/8" X 1-1/8" LG. BRONZE OIL	1
13	113700	BUSHING, THRUST 3/8" X 3.4" X 1/16" BRONZE OIL	3
14	113732	MOTOR, GEAR 1/6 HP, 3PH, MV	1
–	113679	MOTOR, GEAR 1/6 HP 1PH, MV	1
15	100734	BOLT, HEX HEAD 1/4-20 X 1/2" SST	4
16	100736	BOLT, HEX HEAD 1/4-20 X 3/4" SST	3
17	109009	NUT, GRIP 5/16-18 W/NYLON INSERT	1

International Models I-44, I-66 Drive Motors

Item No.	Part No.	Description	Qty.
14	113679	MOTOR, GEAR 1/6 HP, 1PH, MV 200-220/50-60/1PH, 230-240/50-60/1PH	1
–	113732	MOTOR, GEAR 1/6 HP, 1PH, MV 200-220/50-60/3PH, 230-240/50-60/3PH 380/50-60/3, 400-415/50-60/3	1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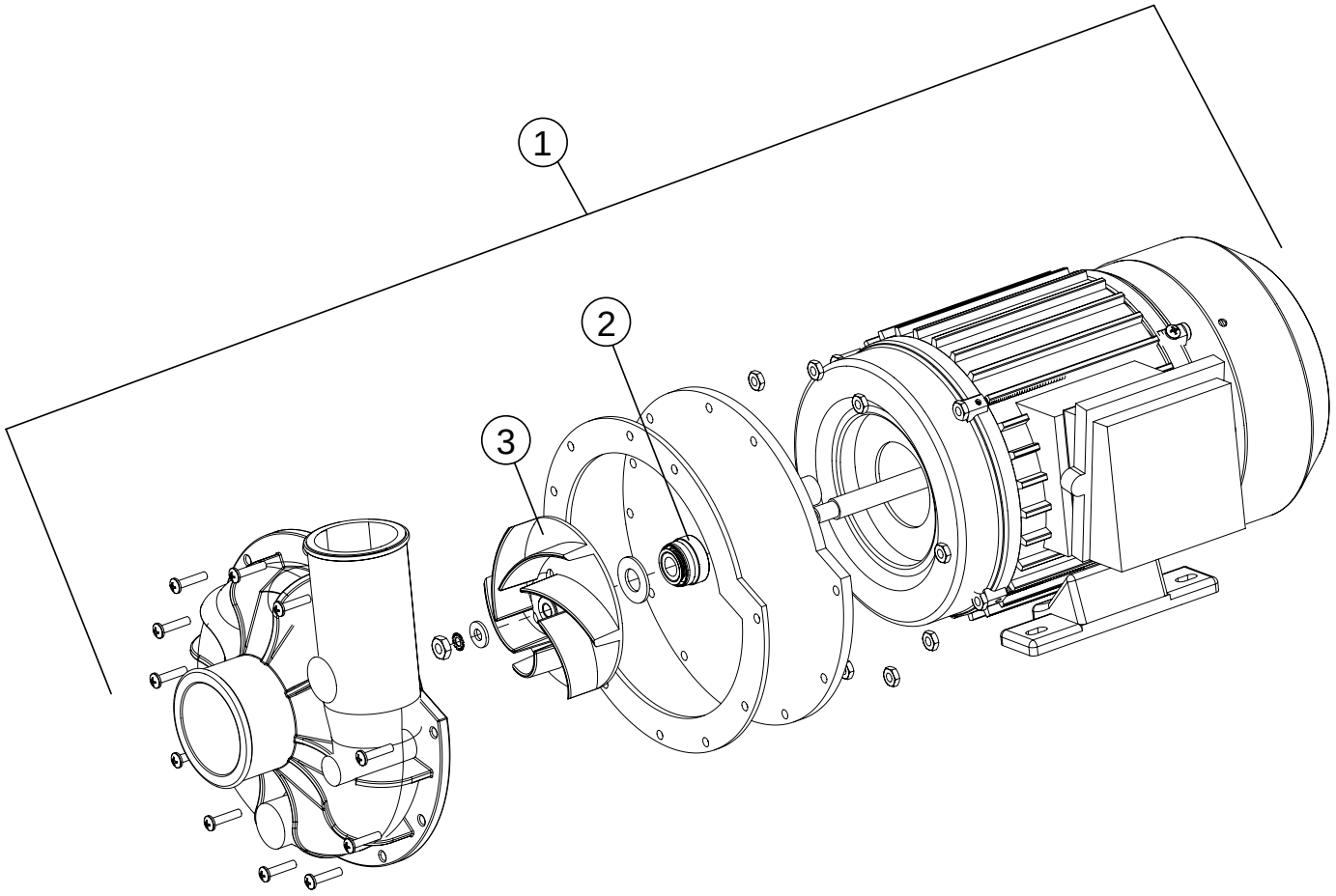
Item No.	Part No.	Description	Qty.
1	202381	ROLLER, CROSSHEAD	1
2	100868	STUD, CROSSHEAD ROLLER	1
3	107089	NUT, JAM 1/2-13	1
4	206300	CRANK, RACK ARM	1
5	206301	SHAFT, 5/8" DIA. X 9" LG.	1
6	206302	HOUSING, BEARING/SEAL	1
7	102244	SEAL, 5/8"	1
8	206303	GASKET, BEARING, HOUSING	1
9	100382	BEARING, JAF #ER104-10	1
10	100007	SCREW, 10-32 X 3/8" TRUSS HEAD	1
11	104925	WASHER, 1/4" X 1" X 16 GAUGE	1
12	103180	WIPER RING	1
13	104916	KEY, 3/16" X 3/16" X 3/4" SST	1
14	100796	V-BELT, 4L330	1
15	113892	SHEAVE, DRIVE AK59, 5/8" BORE	1
16	333880	BRACKET, 44 DRIVE BEARING MOUNTING	1
17	113860	BEARING, SEALED 5/8" BORE	1
18	104923	SCREW, 1/4-20 X 3/8" ROUND HEAD SST	4
19	100739	BOLT, HEX HEAD, 5/16-18 X 3/4" SST	8
20	106013	WASHER, LOCK 5/16" SPLIT SST	8
21	102376	WASHER, FLAT 5/16" SST	8
22	100154	NUT, PLAIN HEX HEAD 5/16-18 SST	8
23	100746	BOLT, HEX HEAD, 3/8-16 X 1-1/4" SST	2
24	104618	WASHER, FLAT 3/8" SST	2
25	109010	NUT GRIP, 3/8-16 W/NYLON INSERT	2
—	414316	DRIVE INSTALL ASSY. (INCLUDES ITEMS 1-13, 18, 19)	1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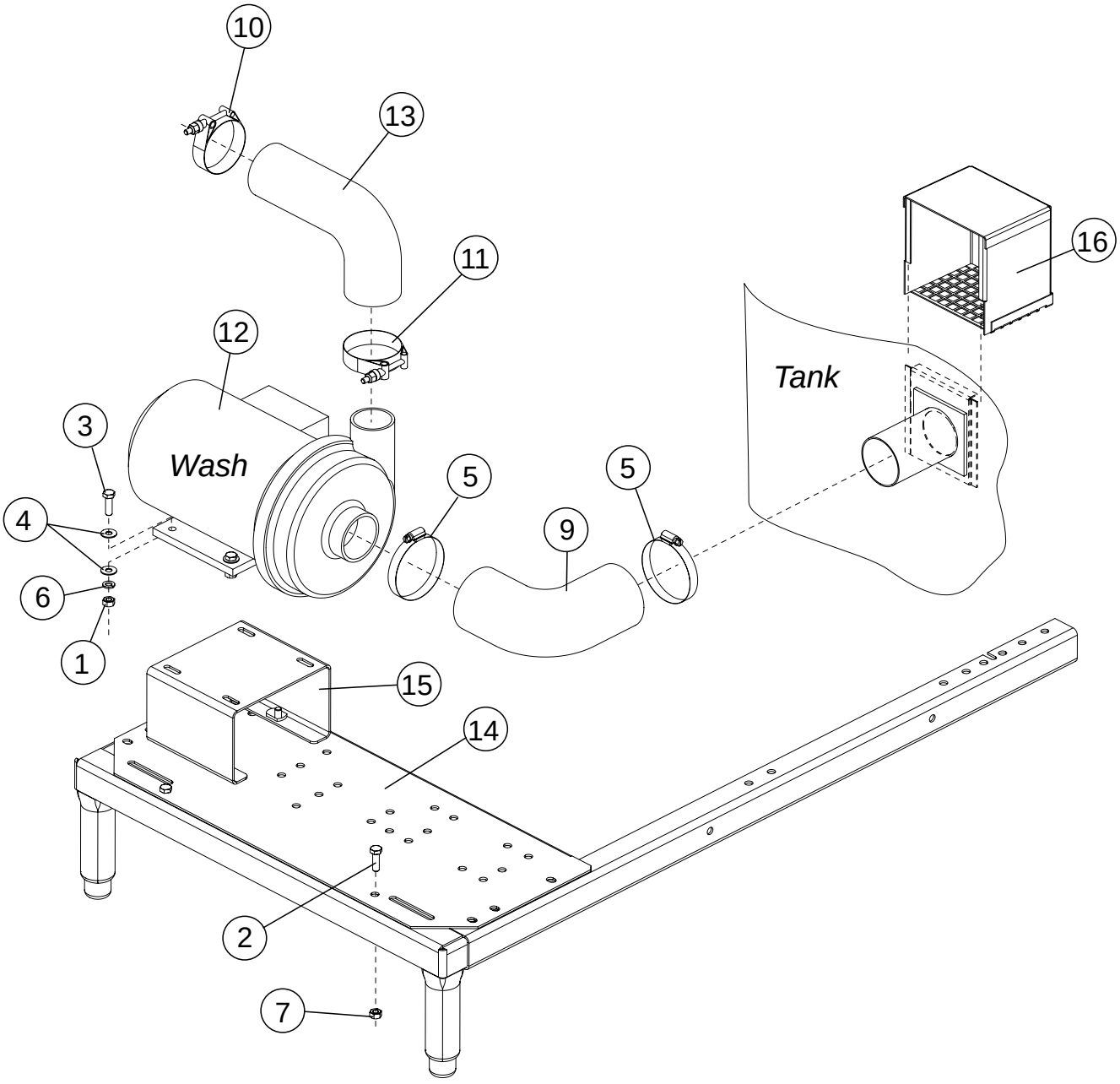
For Models: CH-44, CH-66, MD-44, MD-66

Item No.	Part No.	Description	Qty.
1	114347	PUMP/MOTOR ASSEMBLY (INCLUDES ITEMS 2-3) 208-240/460/60/3 2HP	1
2	108002	PUMP SEAL ASSEMBLY	1
3	114793	IMPELLER, 3.78" OD, COMPOSITE MTL	1

For International Models: I-44, I-66

Item No.	Part No.	Description	Qty.
1	115338	PUMP/MOTOR ASSEMBLY (INCLUDES ITEMS 2-3) 200-220/50/1PH & 3PH, 230-240/50/1PH & 3PH 380/50/3, 400-415/50/3	1
–	115389	PUMP/MOTOR ASSEMBLY (INCLUDES ITEMS 2-3) 200-220/60/1PH & 3PH, 230-240/60/1PH & 3PH 380/60/3, 400-415/60/3	1
2	108002	PUMP SEAL ASSEMBLY	1
3	114793	IMPELLER, 3.78" OD, COMPOSITE MTL	1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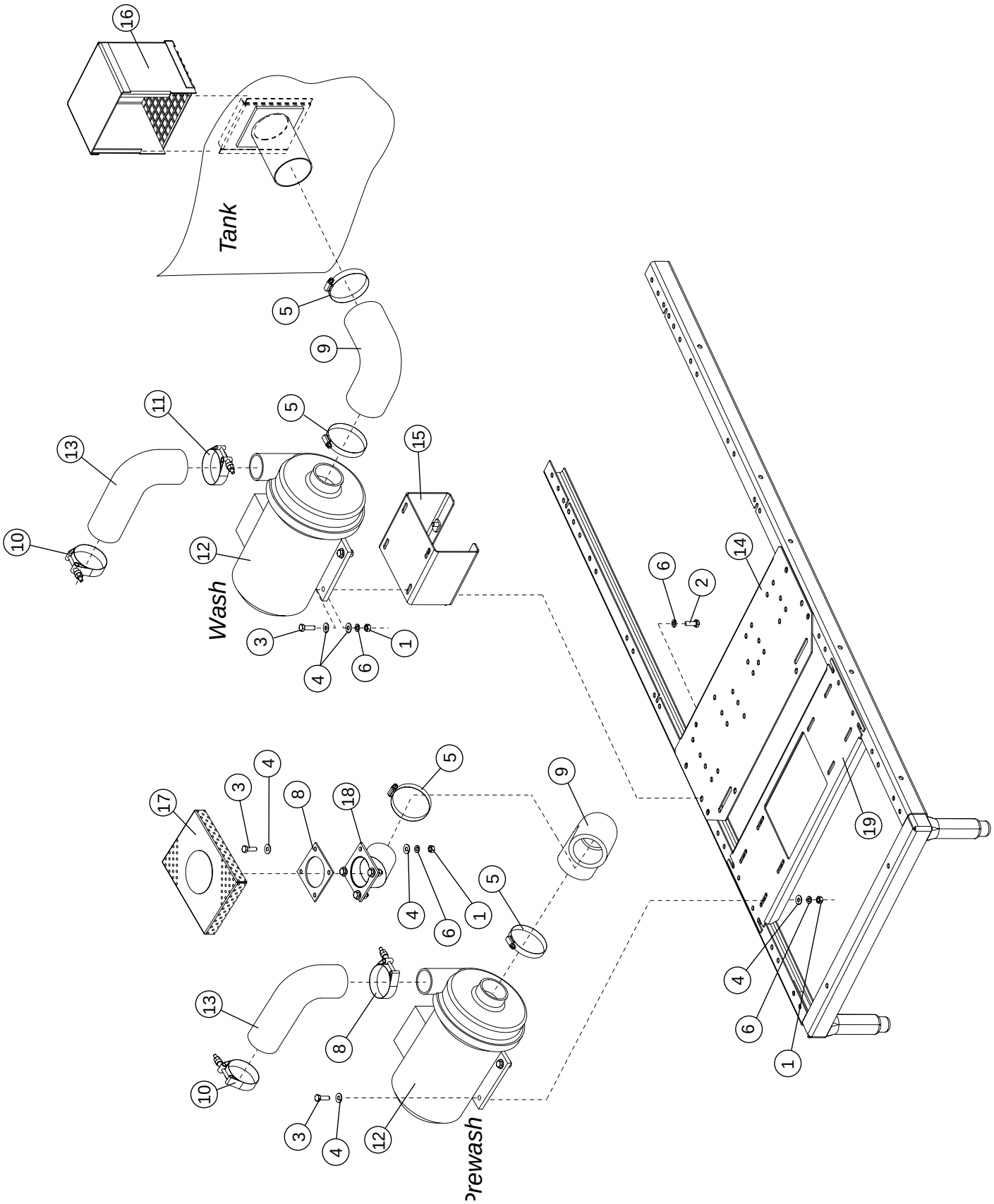
Item No.	Part No.	Description	Qty.
1	100154	HEX PLAIN NUT, 5/16-18 SST	4
2	100739	BOLT, HEX HD., 5/16-18 X 3/4" SST	4
3	100740	BOLT, HEX HD., 5/16-18 X 1" SST	4
4	102376	WASHER, FLAT 5/16" SST	8
5	104203	CLAMP, HOSE M52 SST GEAR TYPE	2
6	106013	WASHER, LOCK 5/16" SPLIT SST	8
7	109009	HEX GRIP NUT, 5/16-18 SST W/NYLON INSERT	2
8	109568	GASKET, PUMP SUCTION	1
9	110372	HOSE, PUMP SUCTION	1
10	110858	HOSE CLAMP, HIGH PRESSURE	1
11	111964	HOSE CLAMP, HIGH PRESSURE	1
12	114347	PUMP/MOTOR ASSY. 208-240/460/60/3 2HP	1
13	207022	HOSE, PUMP DISCHARGE	1
14	327869	PLATE, E PUMP MOTOR SUPPORT	1
15	333076	BRACKET WELDMENT, PUMP MOTOR SUPPORT	1
16	319742	PUMP SUCTION SCREEN, MT-RACK	1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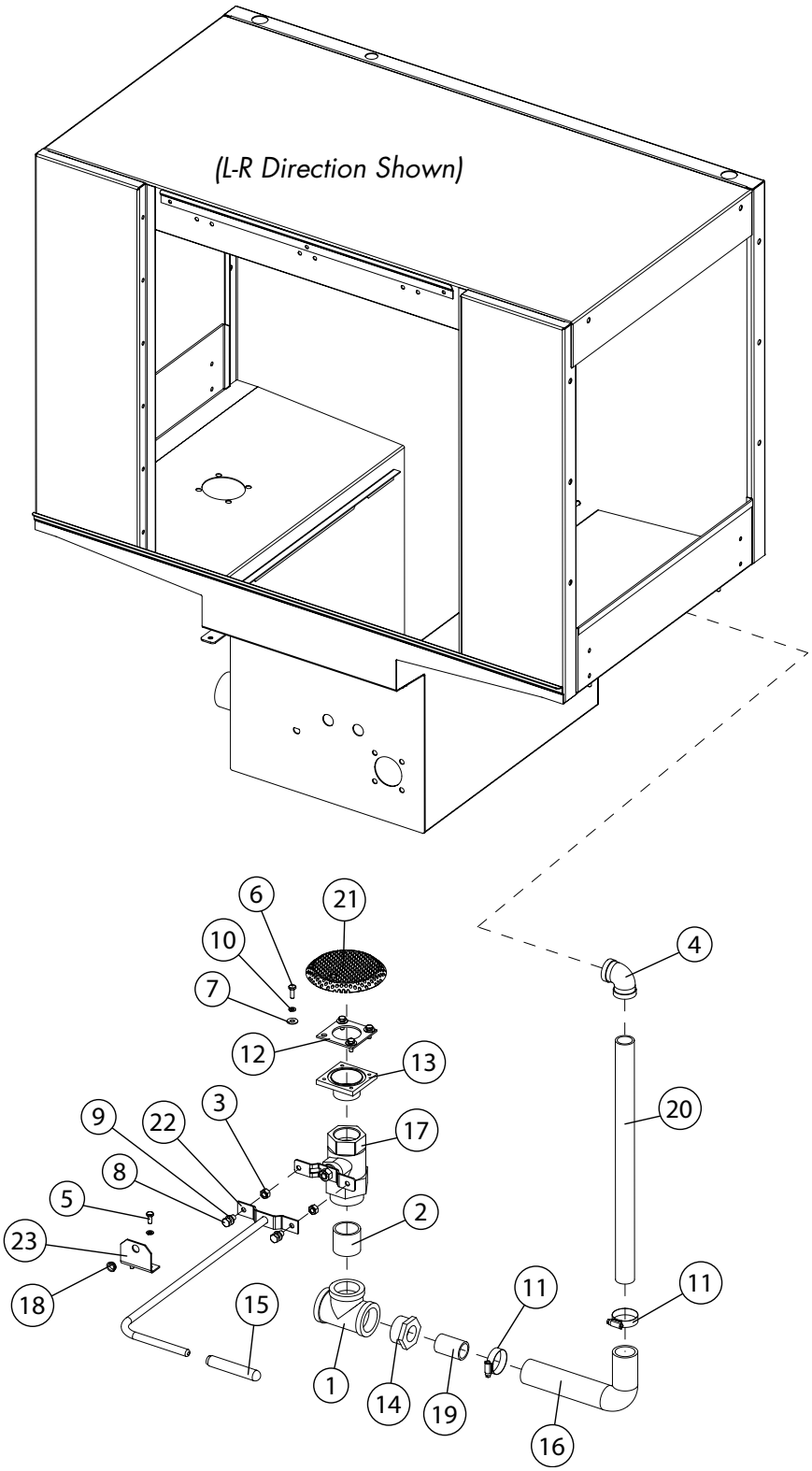
Prewash

Item No.	Part No.	Description	Qty.
1	100154	HEX PLAIN NUT, 5/16-18 SST	16
2	100739	BOLT, HEX HD., 5/16-18 X 3/4" SST	4
3	100740	BOLT, HEX HD., 5/16-18 X 1" SST	16
4	102376	WASHER, FLAT 5/16" SST	32
5	104203	CLAMP, HOSE M52 SST GEAR TYPE	4
6	106013	WASHER, LOCK 5/16" SPLIT SST	18
7	109009	HEX GRIP NUT, 5/16-18 SST W/NYLON INSERT	2
8	109568	GASKET, PUMP SUCTION	1
9	110372	HOSE, PUMP SUCTION	2
10	110858	HOSE CLAMP, HIGH PRESSURE	1
11	111964	HOSE CLAMP, HIGH PRESSURE	1
12	114347	PUMP/MOTOR ASSY. 208-240/460/60/3 2HP	3
13	207022	HOSE, PUMP DISCHARGE	2
14	327869	PLATE, E PUMP MOTOR SUPPORT (WASH)	2
15	333076	BRACKET WELDMENT, PUMP MOTOR SUPPORT	1
16	319742	PUMP SUCTION SCREEN, MT-RACK (WASH)	1
17	324580	SUCTION SCREEN (PREWASH)	1
18	333576	FLANGE WELDMENT, PREWASH PUMP SUCTION	1
19	333075	PLATE, PUMP MOTOR SUPPORT (PREWASH)	1


(L-R Direction Shown)
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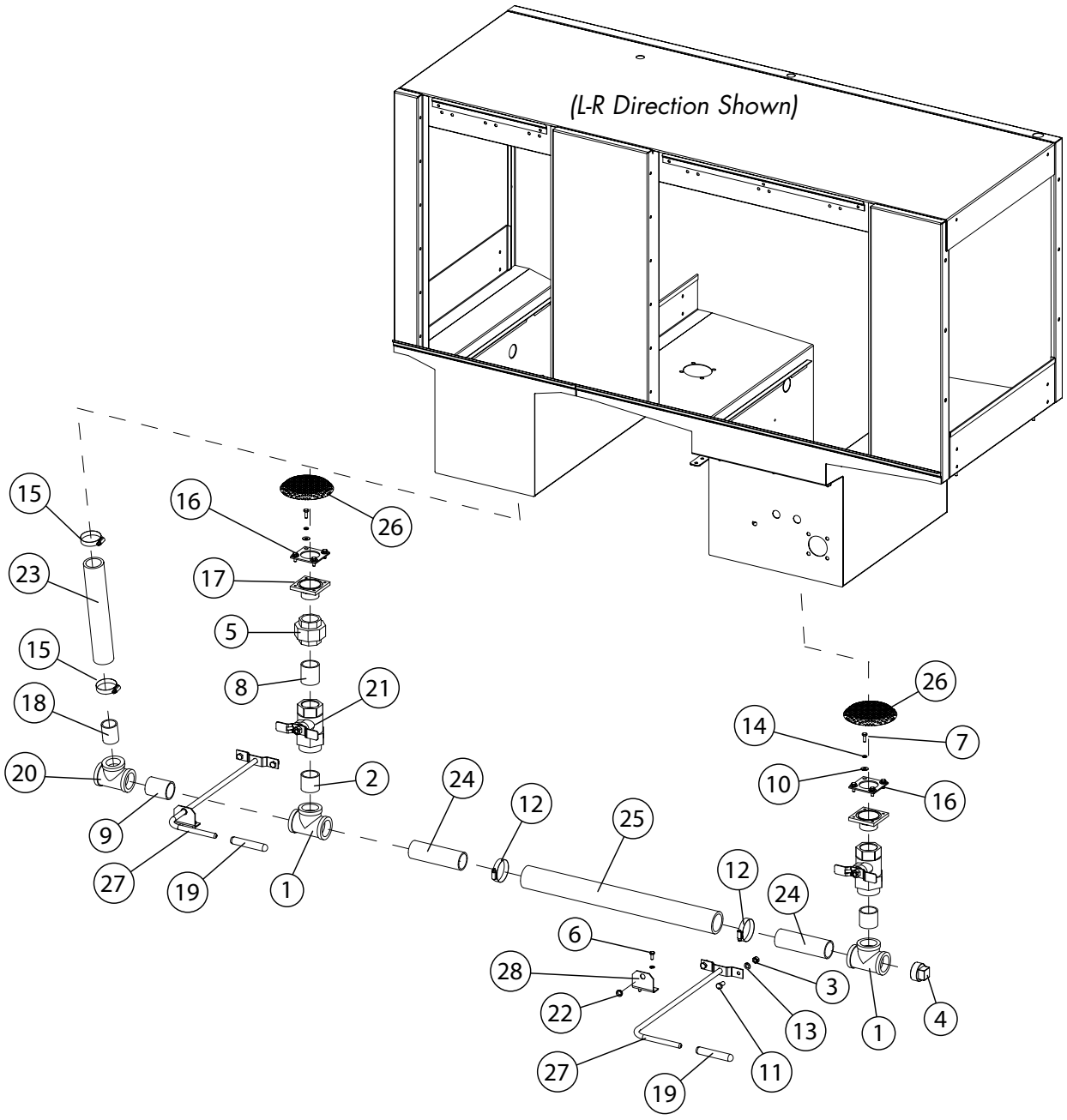
Item No.	Part No.	Description	Qty.
1	100036	TEE, 1-1/2" NPT GALVANIZED	1
2	100043	NIPPLE, 1-1/2" NPT X CLOSE, GALVANIZED	1
3	100140	HEX PLAIN NUT, 3/8-16 SST	2
4	100512	ELBOW, 1" NPT X 90° SST	1
5	100735	BOLT, HEX HD., 1/4-20 X 5/8" SST	2
6	100736	BOLT, HEX HD., 1/4-20 X 3/4" SST	4
7	102376	WASHER, FLAT 5/16" SST	4
8	102563	BOLT, HEX HD., 3/8-16 X 3/4" SST	2
9	106407	WASHER, LOCK 3/8" SPLIT SST	2
10	106482	WASHER, LOCK 1/4" SPLIT SST	6
11	107340	CLAMP, HOSE M28 SST GEAR-TYPE	2
12	108345	GASKET	1
13	111034	DRAIN BODY, MACHINED	1
14	111097	BUSHING, REDUCING, 1-1/2" NPT X 1" NPT GALV.	1
15	114185	GRIP, DRAIN HANDLE	1
16	114472	HOSE, OVERFLOW	1
17	114718	VALVE, BALL 1-1/2" UNION END WITH TEE HANDLE	1
18	114817	SLEEVE BEARING, 1/2" DIA. ROD NYLON	1
19	204383	NIPPLE, TOE, 1"NPT X 2" LG., GALV.	1
20	207190	NIPPLE, TOE, 1" NPT X 19" LG., GALV.	1
21	304816	STRAINER, DRAIN	1
22	333268	DRAIN HANDLE WELDMENT	1
23	333511	BRACKET, DRAIN LEVER SUPPORT	1
NS	114825	NAMEPLATE, DRAIN	1
–	602030	PIPING ASSY, DRAIN (INCLUDES ITEMS 1,2, 13-15, 17, 19, 22)	1


(L-R Direction Shown)
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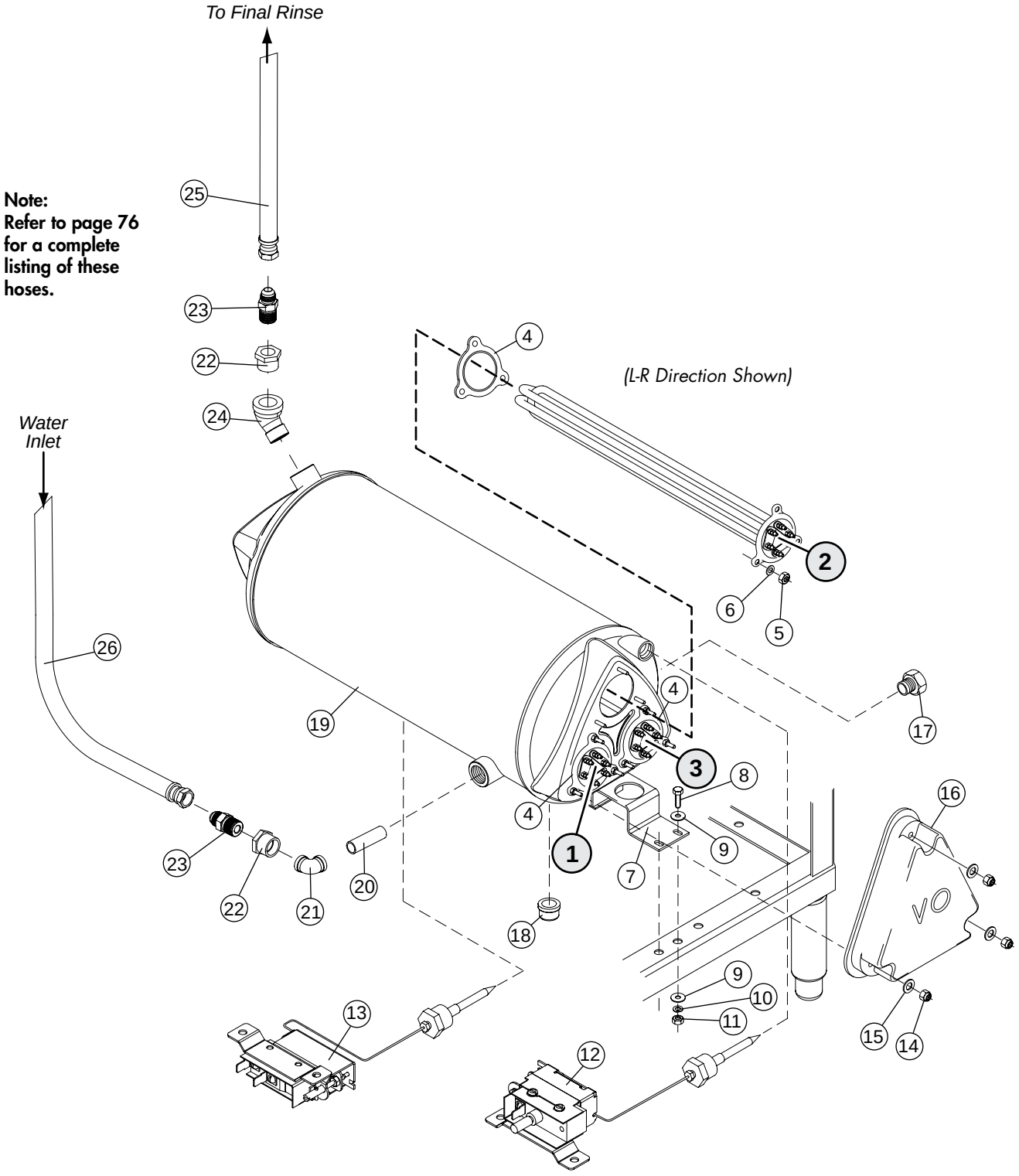
Item No.	Part No.	Description	Qty.
1	100036	TEE, 1-1/2" NPT GALVANIZED	2
2	100043	NIPPLE, 1-1/2" NPT X CLOSE, GALVANIZED	2
3	100140	HEX PLAIN NUT 3/8-16, SST	4
4	100587	PLUG, 1-1/2" NPT, SQ. HEAD, GALV.	1
5	100589	UNION, 1-1/2" NPT GALVANIZED	1
6	100735	BOLT, HEX HD., 1/4-20 X 5/8" SST	4
7	100736	BOLT, HEX HD., 1/4-20 X 3/4" SST	8
8	101830	NIPPLE, 1-1/2" NPT X 2" LG. GALV.	1
9	101833	NIPPLE, 1-1/2" NPT X 2-1/2" LG. GALV.	1
10	102376	WASHER, FLAT 5/16" SST	8
11	102563	BOLT, HEX HEAD, 3/8-16 X 3/4" SST	4
12	104165	CLAMP, HOSE M40 SST GEAR-TYPE	2
13	106407	WASHER, LOCK 3/8" SPLIT SST	4
14	106482	WASHER, LOCK 1/4" SPLIT SST	12
15	107340	CLAMP, HOSE M28 SST GEAR-TYPE	2
16	108345	GASKET	2
17	111034	DRAIN BODY, MACHINED	2
18	111113	NIPPLE TOE, 1-1/4" NPT X 2" LG. GALV.	1
19	114185	GRIP, DRAIN HANDLE	2
20	114216	TEE, 1-1/2" NPT X 1-1/2" NPT X 1-1/4" NPT, GALV.	1
21	114718	VALVE, BALL 1-1/2" UNION END WITH TEE HANDLE	2
22	114817	SLEEVE BEARING, 1/2" DIA. ROD NYLON	2
23	202438	HOSE, 1.625" ID X 12" LG.	1
24	206430	NIPPLE TOE, 1-1/2" NPT X 6" LG. GALV.	2
25	202438	HOSE, 1.875" ID X 23" LG.	1
26	304816	STRAINER, DRAIN	2
27	333268	DRAIN HANDLE WELDMENT	2
28	333511	BRACKET, DRAIN LEVER SUPPORT MT-RACK	2
–	601950	PIPING ASSY, DRAIN (PREWASH) (INCLUDES ITEMS 1, 2, 5, 8, 9, 17-21, 27)	1
–	602031	PIPING ASSY, DRAIN (WASH) (INCLUDES ITEMS 1, 2, 4, 17, 19, 21, 27)	1
NS	114825	NAMEPLATE, DRAIN, MD-RACK	2


To Final Rinse
Note:
Refer to page 76 for a complete listing of these hoses.
(L-R Direction Shown)
Water Inlet
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Item No.	Part No.	Description	Qty.

16KW-40°F Rise 208-220/60/3, 200-220/50-60/1 & 3PH, 380/50-60/3

1	111235	HEATER, 5kW	1
2	107909	HEATER, 6kW	1
3	111235	HEATER, 5kW	1

27kW-70°F Rise - 208-220/60/3, 200-220/50-60/3, 380/50-60/3

1	111232	HEATER, 10kW	1
2	112059	HEATER, 12kW	1
3	111235	HEATER, 5kW	1

16kW-40°F Rise - 230-240/50-60/1 & 3PH, 400-415/50-60/3

1	111236	HEATER, 5kW	1
2	114030	HEATER, 6kW	1
3	111236	HEATER, 5kW	1

27kW-70°F Rise - 230-240/50-60/3, 400-415/50-60/3

1	111233	HEATER, 10kW	1
2	111334	HEATER, 12kW	1
3	111236	HEATER, 5kW	1

16KW-40°F Rise - 460-480/60/3

1	111237	HEATER, 5kW	1
2	114031	HEATER, 6kW	1
3	111237	HEATER, 5kW	1

27kW-70°F Rise - 460-480/60/3

1	111234	HEATER, 10kW	1
2	112060	HEATER, 12kW	1
3	111237	HEATER, 5kW	1

Continued on next page

Item No.	Part No.	Description	Qty.
4	109985	SEAL, ELECTRIC HEATER FLANGE	3
5	100003	NUT, PLAIN 1/4-20 SST	9
6	106482	WASHER, LOCK 1/4" SPLIT	9
7	328254	BRACKET, FRONT BOOSTER	1
8	100739	BOLT, 5/16-18 X 3/4" HEX HD. SST	2
9	102376	WASHER, FLAT 5/16"	4
10	106013	WASHER, LOCK 5/16" SPLIT	2
11	100154	NUT, PLAIN 5/16-18 SST	2
12	110561	THERMOSTAT, HIGH LIMIT WITH CAPILLARY	1
13	109069	THERMOSTAT, CONTROL WITH CAPILLARY	1
14	107967	NUT GRIP, 1/4-20 W/NYLON INSERT	3
15	106026	WASHER, FLAT 1/4"	3
16	108576	COVER, BOOSTER, NO CUTOUT	1
17	102505	PLUG, 3/4" NPT BRASS	1
18	100113	CAP, 3/4" NPT SST	1
19	414331	TANK BOOSTER	1
20	102490	NIPPLE, 3/4" NPT X 3-1/2" LG. BRASS	1
21	102442	ELBOW, 3/4" NPT X 90° BRASS	1
22	102392	BUSHING, REDUCING 3/4" NPT X 1/2" NPT BRASS	2
23	115101	CONNECTOR, MALE 1/2" NPT X 1/2" 37° FLARE JIC BRASS	2
24	113706	ELBOW, STREET 3/4" NPT X 45° BRASS	1
25	419003	HOSE ASSY 1/2" ID X 46" LG FLARE JIC (For L-R machine)	1
—	419012	HOSE ASSY 1/2" ID X 60" LG FLARE JIC (For R-L machine)	1
26	419012	HOSE ASSY 1/2" ID X 60" LG FLARE JIC (For L-Rmachine)	1
—	419007	HOSE ASSY 1/2" ID X 46" LG FLARE JIC (For R-L machine)	

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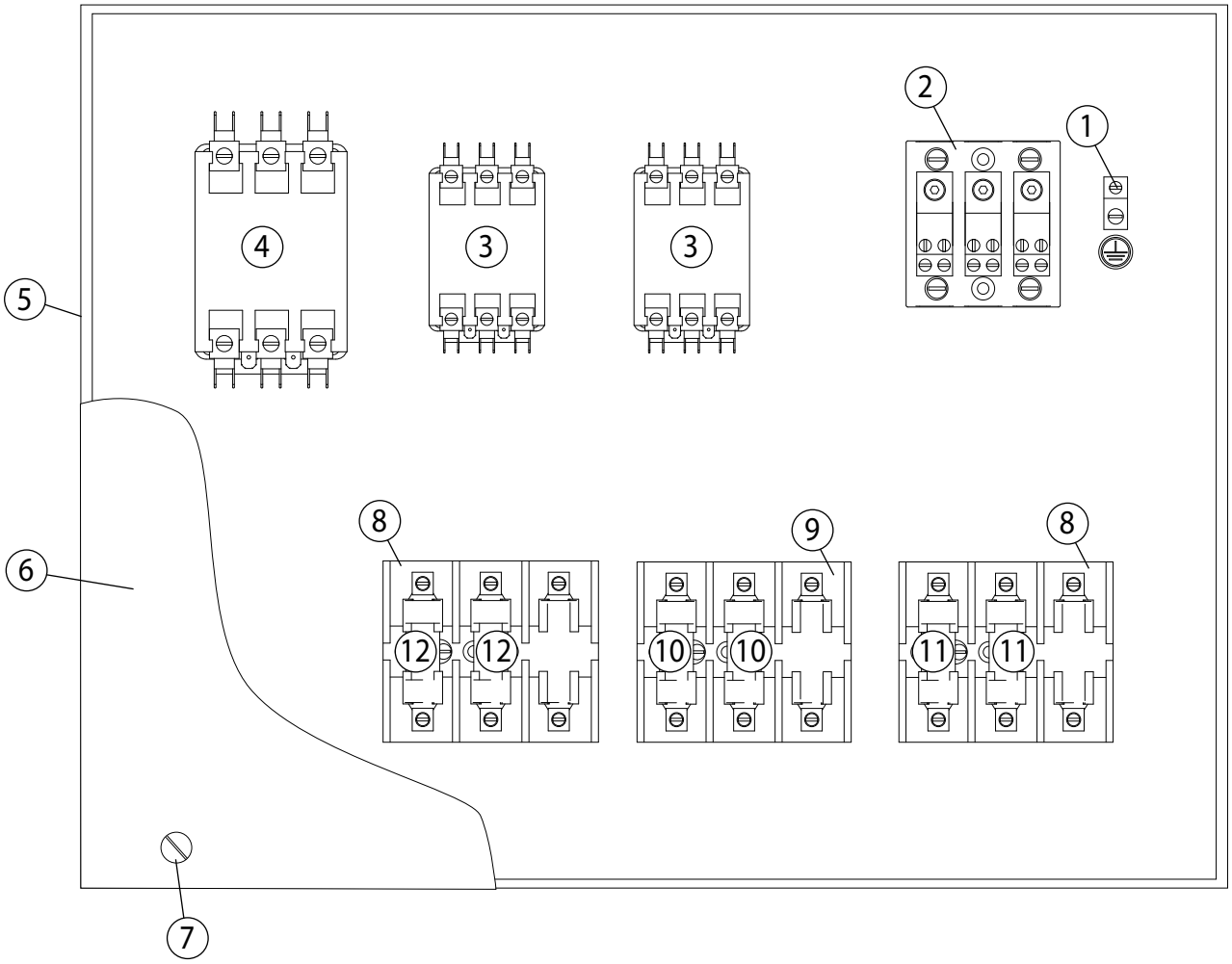
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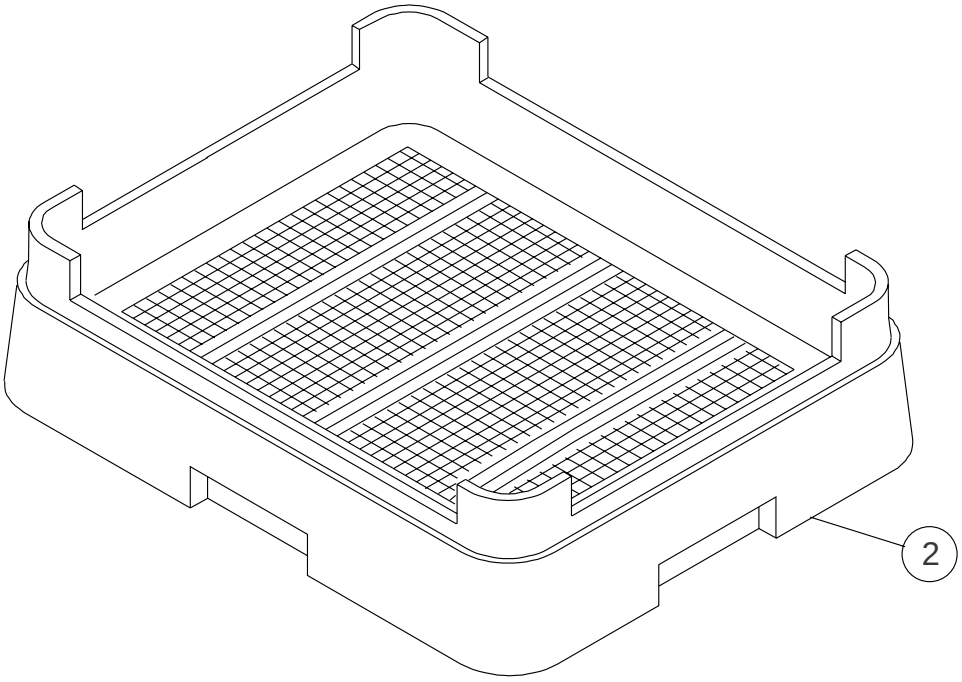
Item No.	Part No.	Description	Qty.
1	103310	LUG, GROUND	1
2	111833	BLOCK, INPUT TERMINAL 175A 3-POLE	1
3	111827	CONTACTOR, 60 FLA	2
4	111231	CONTACTOR 75 FLA	1
5	328421	CABINET, BOOSTER CONTROL	1
6	328525	COVER, CABINET BOOSTER CONTROL	1
7	100073	SCREW, 1/4-20 X 1/2" TRUSS HEAD	2
8	108424	BLOCK, FUSE 100A T-TYPE	2
9	180171	BLOCK, FUSE 60A J-TYPE	1
10	180176	FUSE, J-TYPE 60A	2
11	111683	FUSE, J-TYPE 30A	2
12	180060	FUSE, T-TYPE 70A	2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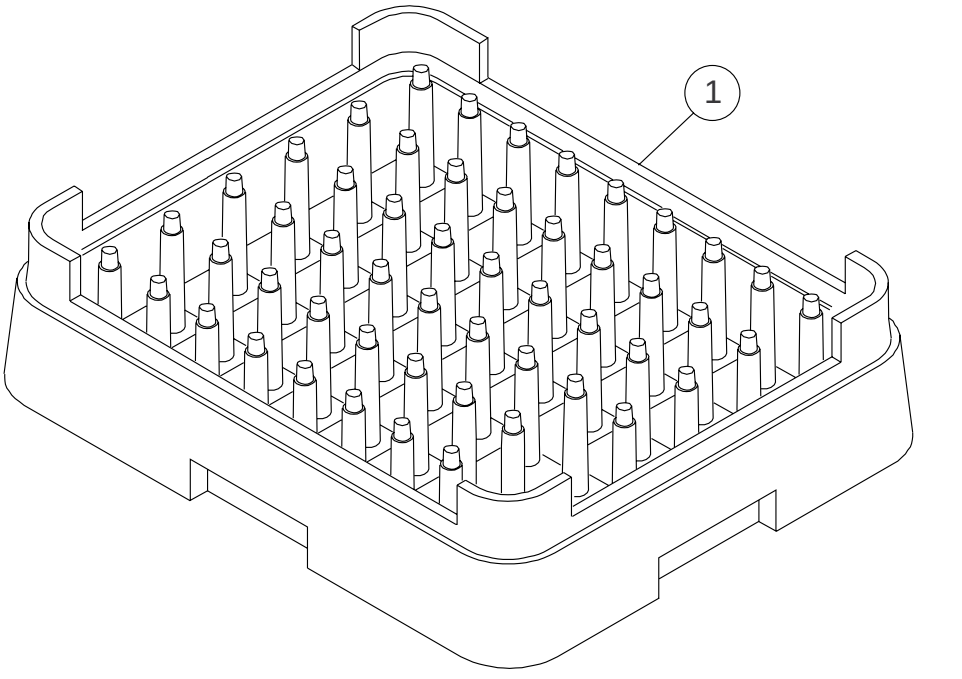
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Item No.	Part No.	Description	Qty.
1	101285	RACK, PEG	1
2	101273	RACK, COMBINATION	1

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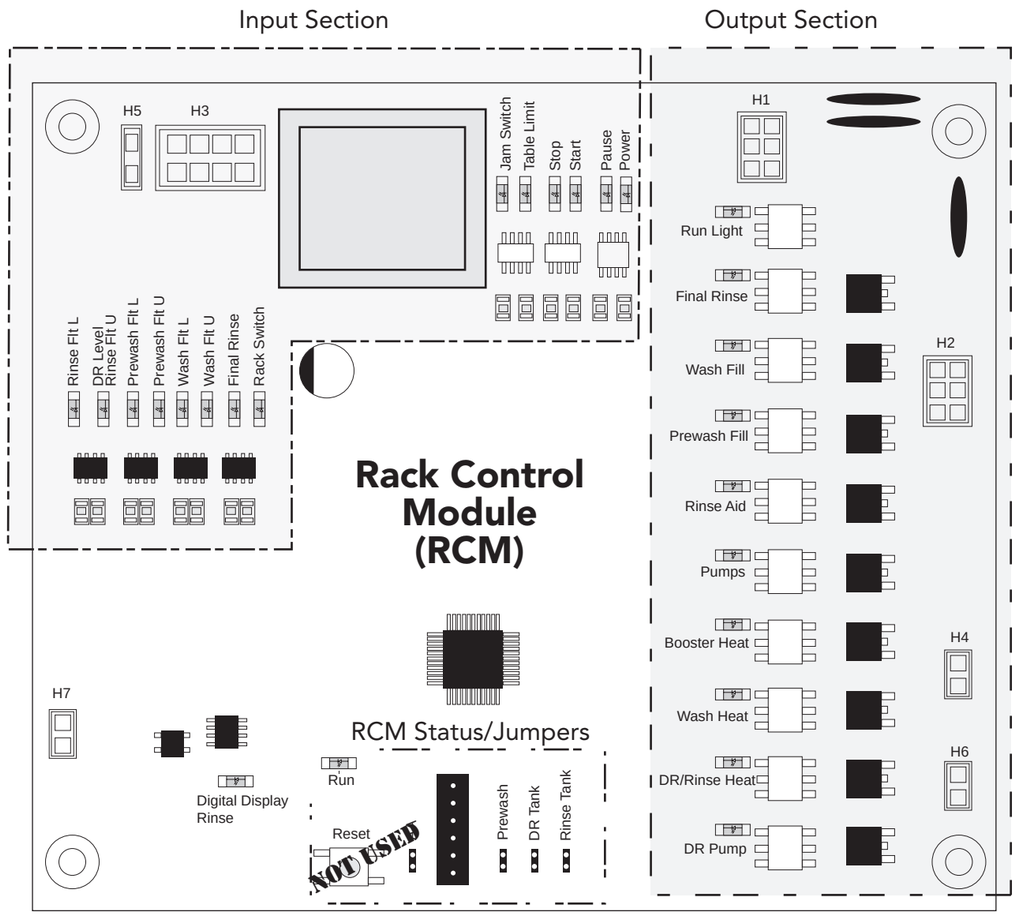
Rack Control Module Operation

and

Electrical Schematics

Rack Control Module (RCM)



RCM Sections

Refer to the illustration of the Rack Control Module (RCM) to the left and note the three outlined sections. The sections are labeled and the function of each section is explained below:

Input Section — Red lights show the state of the inputs to the RCM.

Output Section — Green lights show the outputs from the RCM to the machine.

RCM Status/Jumpers — The red RUN indicator shows that the RCM is energized. The jumpers set-up the inputs and outputs for various machine models.

RCM Harness Connectors

Note the illustration of the RCM at left and the details from the machine electrical schematic #702260 to the right. These illustrations show the location and connections from the RCM to the dishwasher. The function of the connectors are:

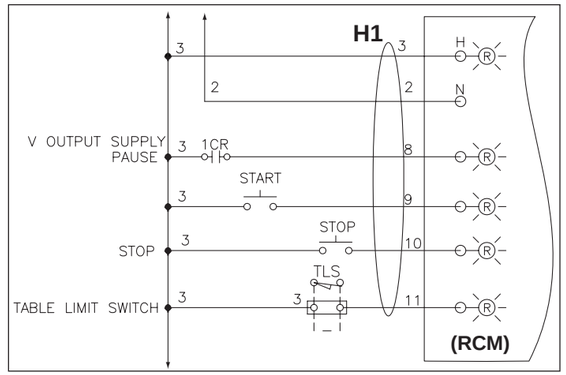
H1 — Control Cabinet Inputs
H2 — Control Cabinet Outputs
H3 — Inputs from Junction Box
H4 — Heat Outputs

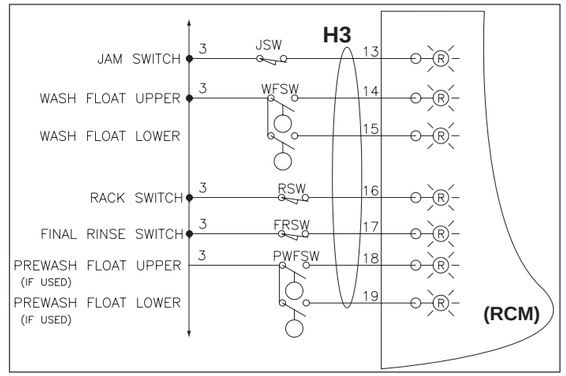
RCM Operation

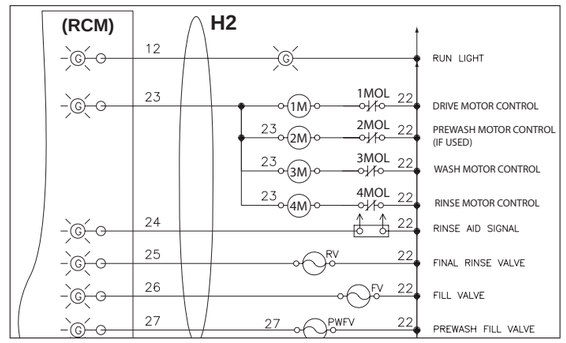
The insert following this page gives a detailed explanation of the inputs, outputs and the status of the indicator lights on the RCM during normal operation of the machine.

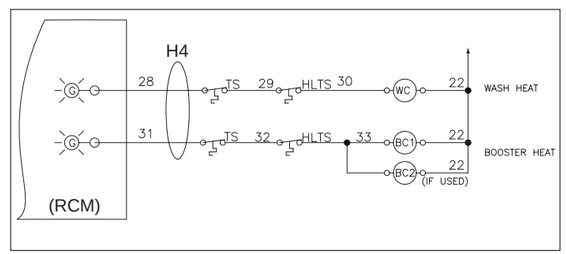
Refer to these instructions and the electrical schematic for the operation sequence of the RCM and to aid in the troubleshooting of the dishwasher.

Electrical Schematic 702260 — RCM Inputs









Rack Control Module (RCM) Operation
Input Section Red Indicator Lights

The indicator lights on the Rack Control Module (RCM) show the status of many dishwasher components and the corresponding operating condition of the dishwasher.
The explanation of the RCM is given below:

NOTE:
Whenever a RED input light is ON its corresponding input circuit is CLOSED.

Power - ON when the power switch on the dishwasher control panel is on.

Pause - ON when the door(s) are closed.
OFF when a door(s) are open.

Start - ON when the front panel start push button is pressed, OFF when it is released.

Stop - ON when the front panel stop push button is pressed, OFF when it is released.

Table Limit - ON when the table limit switch is closed (The table limit switch is not activated).

Jam Switch - ON when the jam switch is closed (The jam switch is not activated).

Rack Switch - ON when the rack switch is closed. OFF when a dishrack is inserted into the dishwasher.

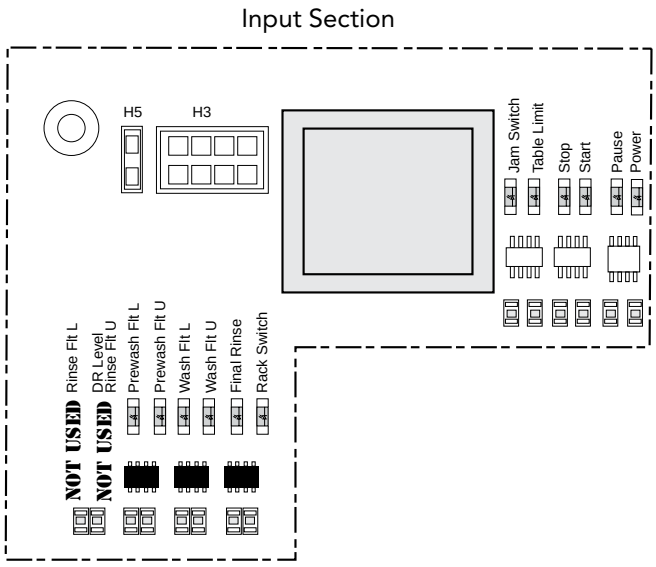
Final Rinse - ON when the final rinse switch is closed. OFF when the dishrack is in the Final Rinse Zone.

Wash Flt U - ON when the wash tank is full and the wash upper float is up.

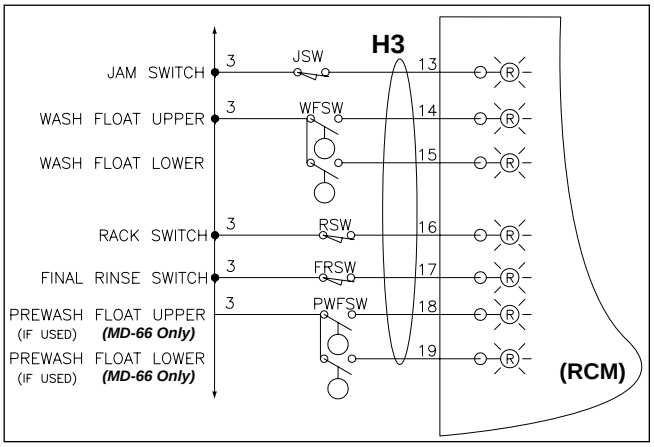
Wash Flt L - ON when the wash tank is full and the wash lower float is up.

Prewash Flt U - ON when the prewash tank is full and the PW upper float is up. (Model MD-66 Only)

Prewash Flt U - ON when the prewash tank is full and the PW upper float is up. (Model MD-66 Only)



Red lights show the status of inputs on the RCM.

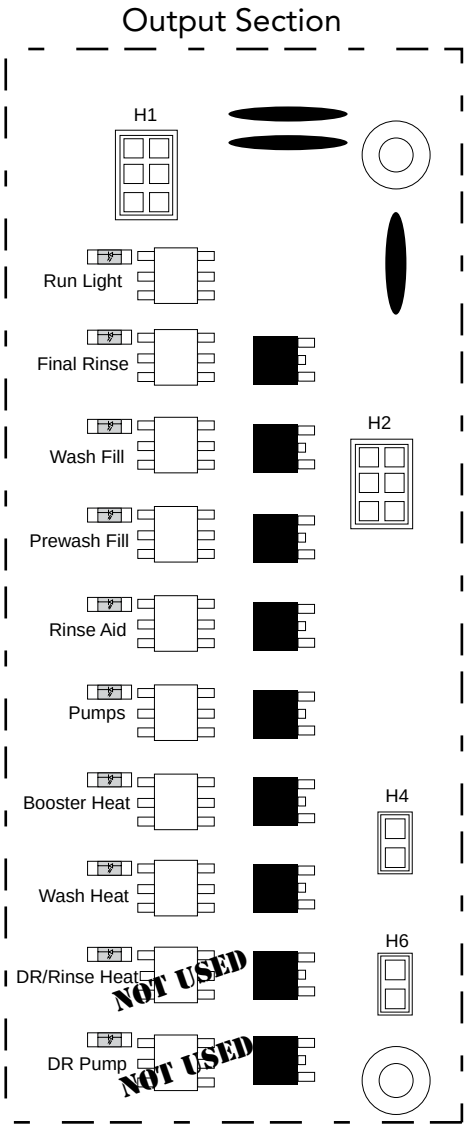


Inputs to the RCM come from the dishwasher controls.

ATTENTION:
The **DR Level/Rinse Flt U and the Rinse Flt L are not used on the MD-44 and the MD-66 models.**

Rack Control Module (RCM) Operation

Output Section Green Indicator Lights



NOTE:
Whenever a Green output light is ON it means that the RCM is providing a signal to enable its corresponding circuit; however, the actual operation of the circuit may depend on other associated controls.

Run Light - ON when the start switch on the dishwasher front control panel is pressed. The run light on the dishwasher front panel is also comes on.

SUSPENDED OPERATION - In the event that the wash fill or prewash fill are on for more for more than 10 min., all inputs & outputs OFF. THE RUN LIGHT WILL FLASH ONCE PER SECOND. THE DISHWASHER POWER SWITCH MUST BE TURNED OFF AND ON TO CLEAR THIS CONDITION.

Final Rinse - ON whenever the final rinse switch is activated and the pumps are on or if the fill valve is ON when the machine is filling. Jam Switch, Table Limit and Pause output lights must be ON.

Wash Fill - If the Wash Flt L light is off, then the Wash Fill Green light is ON until the Wash Flt L and Wash Flt U red input lights come on. The Pause input light must be on. The Green Wash Fill light will stay ON for a maximum of 10 minutes.

Prewash Fill MD-66 Only - If the Prewash Flt L red input light is off, then the Prewash Fill Green light is ON until the PW Flt L and PW Flt U red input lights come on. The Pause input light must be on. The Green Prewash Fill light will stay ON for a maximum of 10 minutes.

Rinse Aid - ON when the final rinse switch is operated. OFF when the Jam Switch or Table Limit red output lights are OFF or if the Stop switch on the control cabinet is pressed. OFF when the RCM Timer has timed out during normal cycle.

Pumps - Output is controlled by the RCM Timer. ON when the rack switch is activated. OFF when the Jam Switch or Table Limit red output light are OFF or if the Stop switch on the control cabinet is pressed. OFF when the RCM Timer has timed out during normal cycle.

Booster Heat - Output to Booster Heat Contactor. ON if the Wash Flt L and Pause red input lights are on. OFF if Wash Flt L or Pause lights are off.

Wash Heat - Output to Wash Heat Contactor. ON if the Wash Flt L and Pause red input lights are on. OFF if Wash Flt L or Pause lights are off.

DR/Rinse Heat - NOT USED FOR MODELS MD-44 AND MD-66.

DR Pump - NOT USED FOR MODELS MD-44 AND MD-66.

Rack Control Module (RCM) Operation
RCM Timer Operation

The timer controls the drive motor, wash pump and the CH66, MD66, I66 prewash pump.

The timer is internal to the RCM. The PUMPS output indicator light shows the RCM Timer is active.

The timer output comes on when the rack switch opens, this turns on the PUMPS output.
When the rack switch closes the timer counts for 90 seconds.
After 90 seconds, the PUMPS output is turned off.
Inserting another rack during the timing resets the timer to 90 seconds.

The red input lights below show how the RCM inputs affect the timer's operation,

START light ON - Enables automatic operation

STOP light ON - Disables automatic operation

RACK SWITCH light OFF - Starts the timer

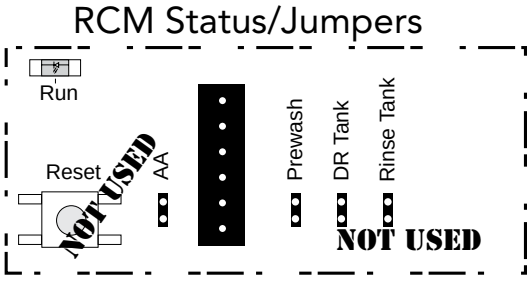
TABLE LIMIT light OFF - Pauses the timer. Timing resumes when the light comes back on.

PAUSE light OFF - Pauses the timer. Timing resumes when the light comes back on.

JAM light OFF - Stops the machine and disables automatic operation. The front panel Start push button must be pressed to resume automatic operation and a dish rack must be inserted to start the timer.

RCM Status and Jumper Section

The RCM Status/Jumper Section contains one red indicator light and four jumpers that are associated with the set-up of the RCM.



RUN - ON when power is turned on to the RCM.
THIS RUN LIGHT DOES NOT MEAN THAT THE DISHWASHER IS READY TO OPERATE.

JUMPERS:

Prewash - Enables the prewash input and output functions.

AA, DR Tank, Rinse Tank - NOT USED

Reset Button - NOT USED

Rack Control Module (RCM) Indicator Lights

Normal Operation Sequence

The following illustration Plates show the condition of the indicator lights (On or Off) during the normal operation of the dishwasher. All lights are off when the dishwasher power is turned off.

Plate 1:

1. Doors closed.
2. Power switch ON.
3. POWER light ON.
4. Floats down.
5. Initial fill begins.

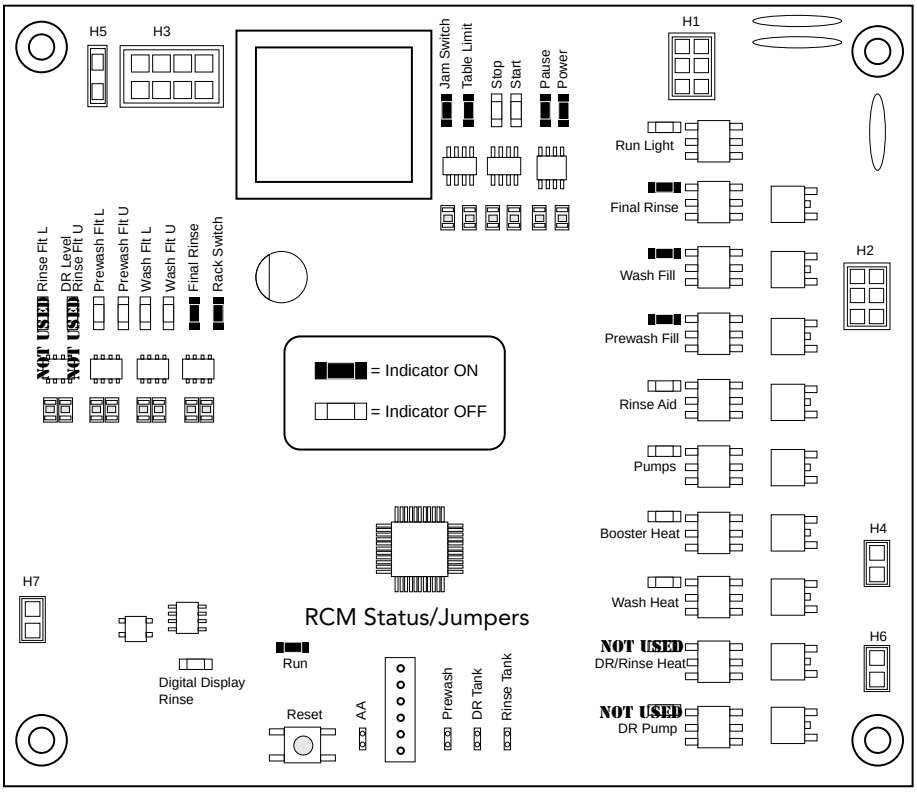


Plate 2:

1. Doors closed.
2. POWER light ON.
3. Floats up.
4. Tanks full.
5. Initial fill complete.
6. Tank heat enabled.*
7. Booster heat enabled.*

* NOTE: Tank heat and booster tank heat were enabled as soon as the lower float in the wash tank was up.

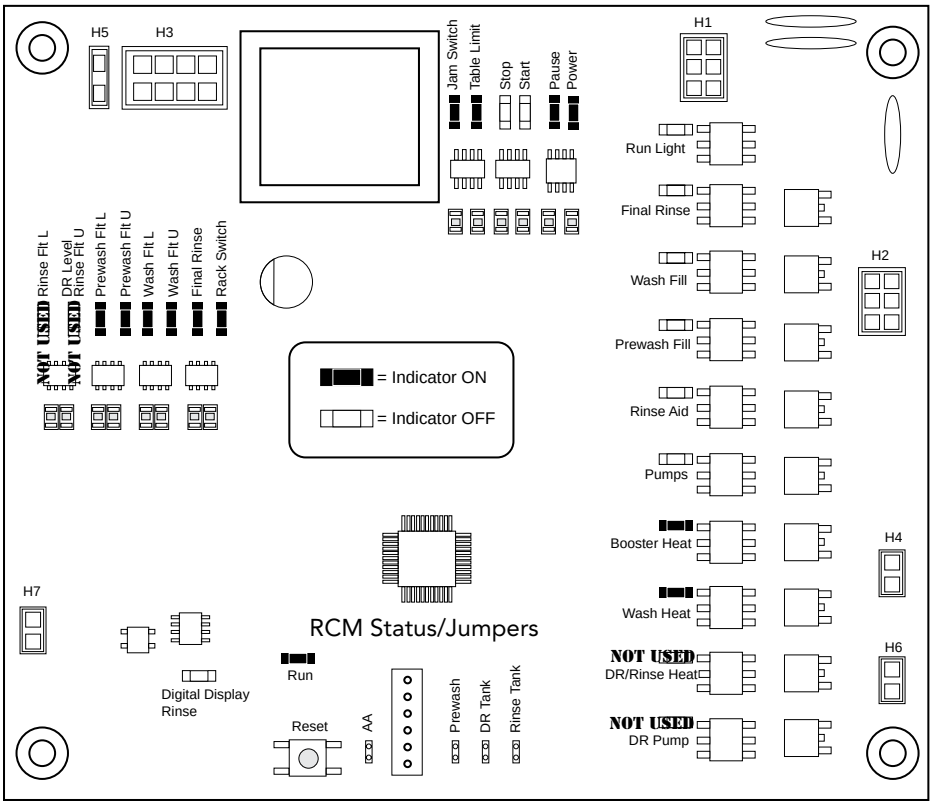


Plate 3:

1. Doors closed.
2. POWER light ON.
3. Floats up.
4. Tanks full.
5. Tank heat enabled.
6. Booster heat enabled.
7. Initial fill complete.
8. Start push button pressed and released.
9. RUN LIGHT ON and Green light on front panel ON.

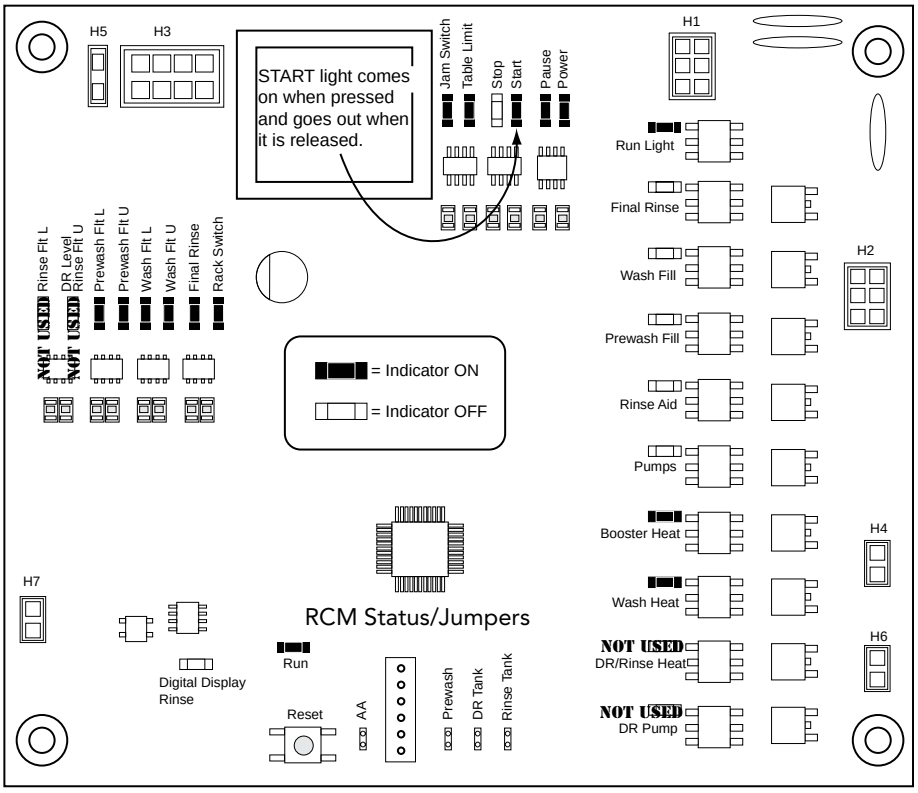


Plate 4:

1. Doors closed.
2. POWER light ON.
3. Floats up.
4. Tanks full.
5. Tank heat enabled.
6. Booster heat enabled.
7. Rack inserted into machine/rack switch activated.
8. RCM timer active. Timer will begin counting down the 90 sec. interval when the rack switch is de-activated
9. Pumps and drive motor running.

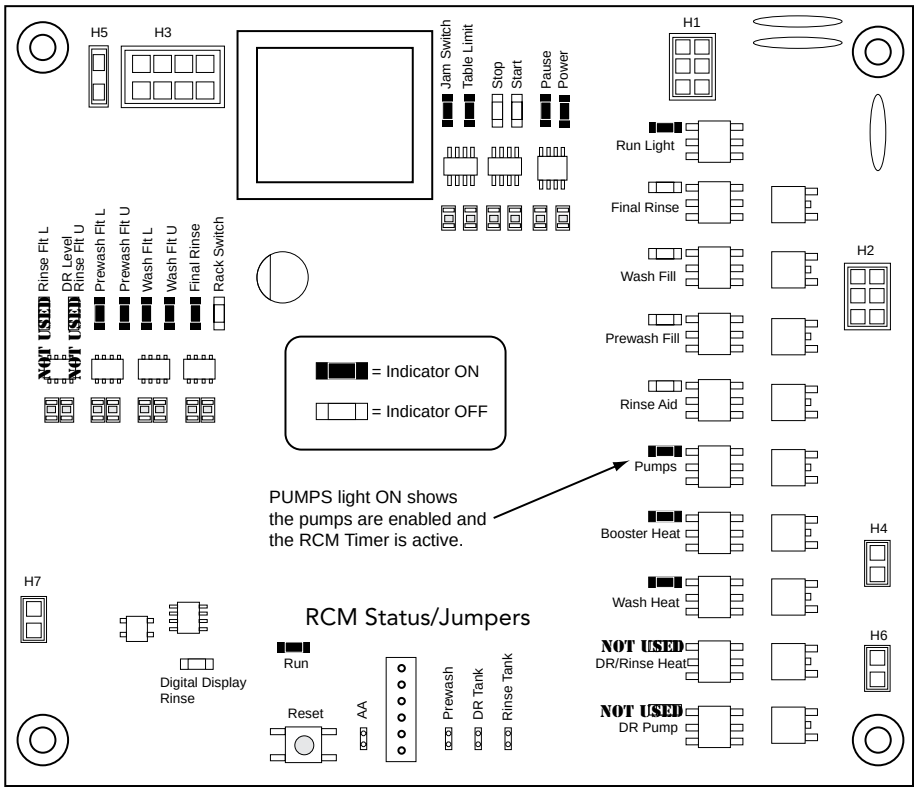


Plate 5:

1. Doors closed.
2. POWER light ON.
3. Floats up.
4. Tanks full.
5. Tank heat enabled.
6. Booster heat enabled.
7. Rack switch de-activated.
8. Rack has moved through the machine to the final rinse zone and activated the final rinse switch.
9. Final rinse valve enabled.
10. Rinse aid enabled.
11. RCM timer counting down the 90 second time interval.
12. Pumps and drive motor running.

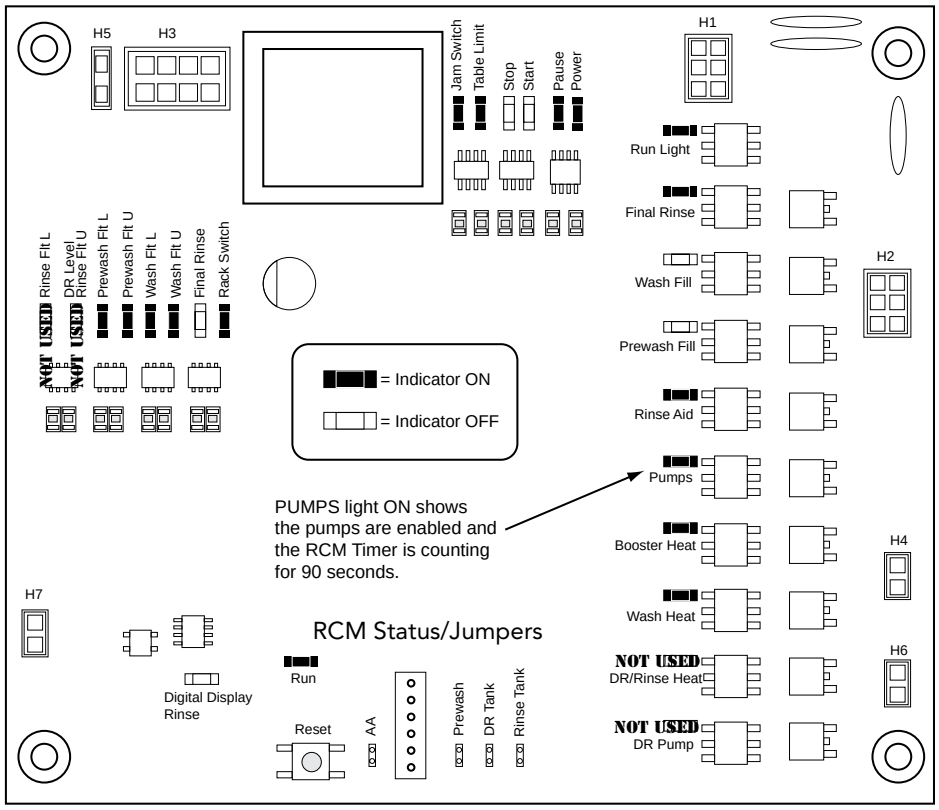


Plate 6:

1. Doors closed.
2. Power light ON.
3. Floats up.
4. Tanks full.
5. Tank heat enabled.
6. Booster heat enabled.
7. Rack has exited the machine/final rinse switch de-activated.
8. Final rinse valve disabled.
9. Rinse aid disabled.
10. RCM timer 90 second interval complete.
11. Pumps and drive motor off.

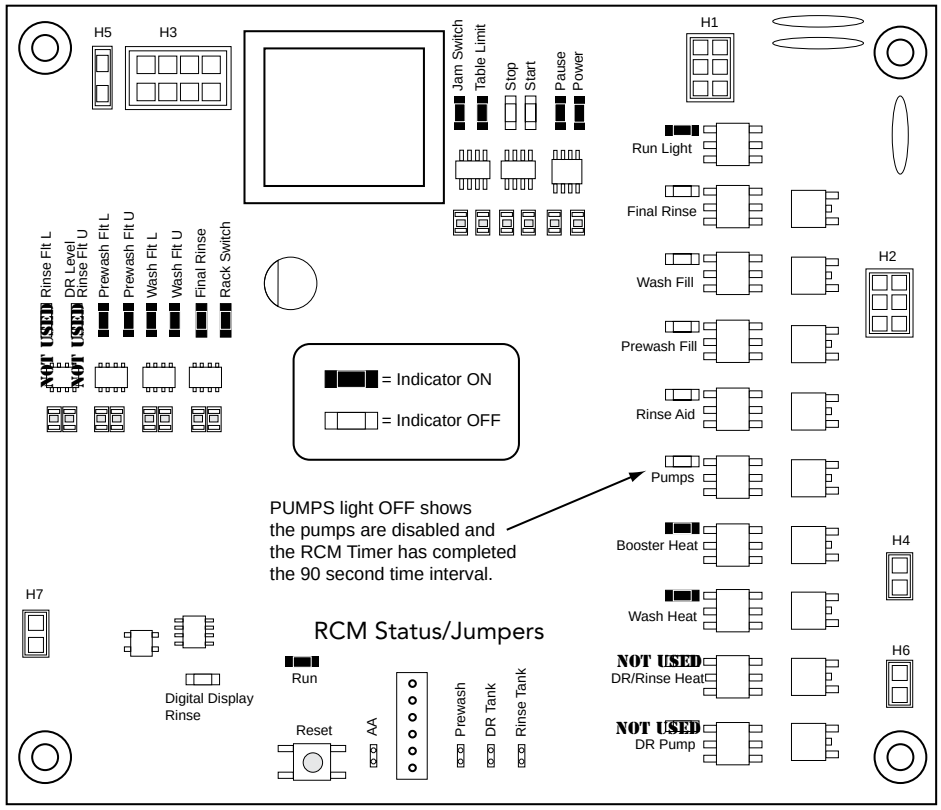


Plate 7:

1. Door(s) Opened.
2. PAUSE light OFF.
3. POWER light ON.
4. RUN LIGHT OFF.
5. Tanks full.
6. Tank heat Disabled.
7. Booster heat disabled.
8. Pumps and drive disabled.
9. RCM timer paused for a maximum of 5 minutes. After 5 minutes, the machine stops and the START push button must be pressed to operate the dishwasher.
10. Closing the door(s) before 5 mins. has elapsed will resume operation where it left off. Run Light ON. Pause light ON.

Door Opened while Dishwasher is In-cycle

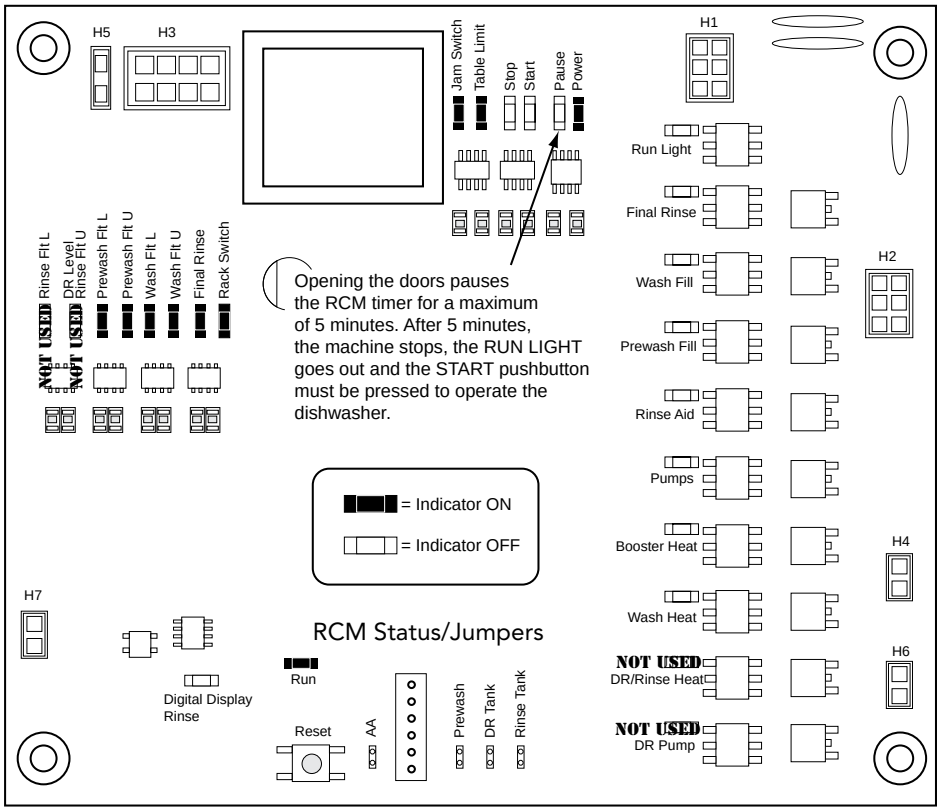
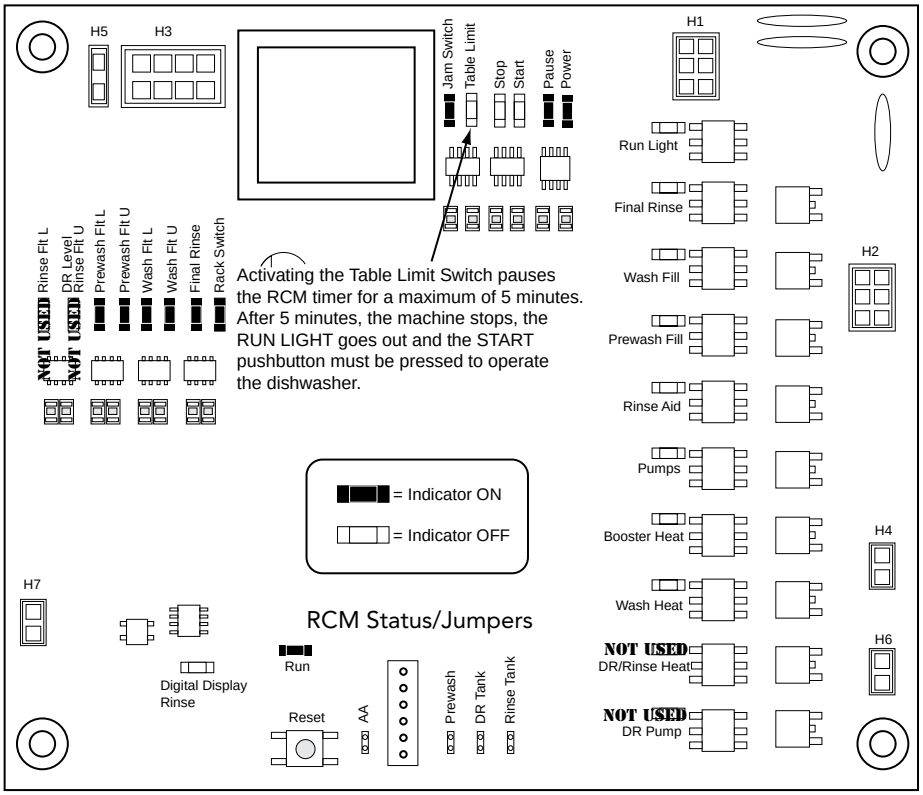


Plate 8:

1. Door Closed.
2. POWER light ON.
3. Table limit switch activated.
4. TABLE LIMIT OFF.
5. RUN LIGHT OFF.
6. Tank heat ON.
7. Booster heat ON.
8. Pumps and drive disabled.
9. RCM timer paused for a maximum of 5 minutes. After 5 minutes, the machine stops and the START push button must be pressed to operate the dishwasher.
10. De-activating the table limit switch before 5 mins. has elapsed will resume operation where it left off. RUN LIGHT ON. TABLE LIMIT ON.

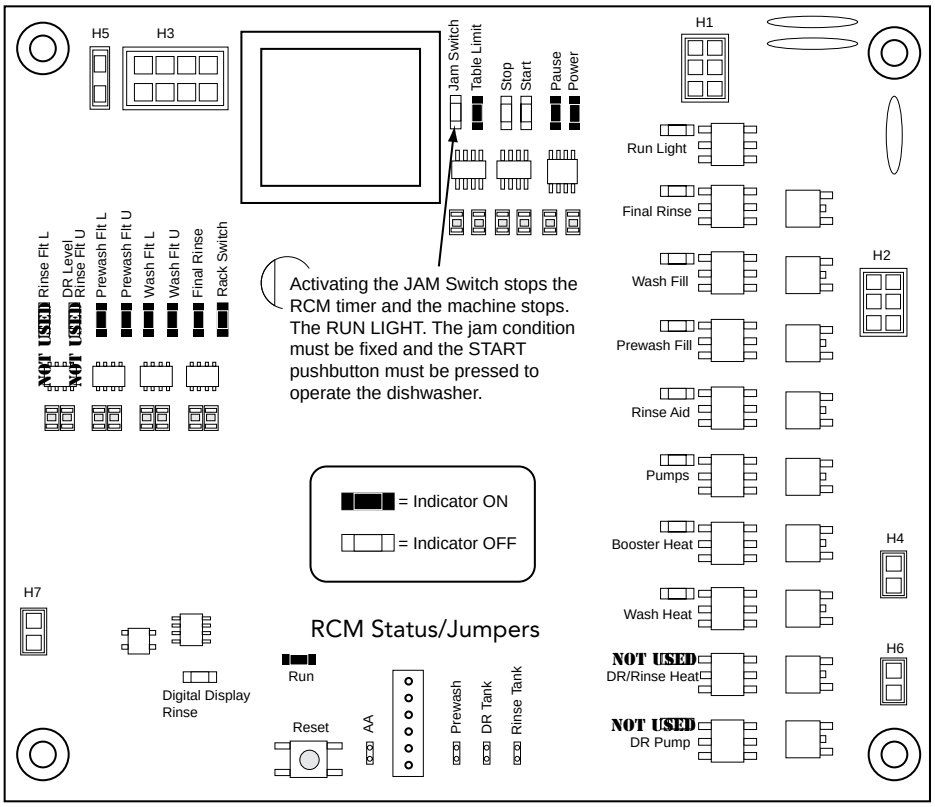
Table Limit Switch Activated while Dishwasher is In-cycle



Jam Switch Activated while Dishwasher is In-cycle

Plate 9:

1. Doors closed.
2. POWER light ON.
3. RUN LIGHT OFF.
4. JAM SWITCH OFF.
5. Floats up.
6. Tanks full.
7. Tank heat Disabled.
8. Booster heat disabled.
9. Pumps and drive disabled.
10. RCM timer stopped.
11. Start push button on front panel must be pressed to operate the machine once the jam is fixed.
    RUN LIGHT ON.
    JAM SWITCH ON.



Stop Switch Pressed while Dishwasher is In-cycle

Plate 10:

1. Door closed.
2. POWER light ON.
3. Floats up.
4. Tanks full.
5. Tank heat Disabled.
6. Booster heat disabled.
7. Pumps and drive disabled.
8. RUN LIGHT OFF.
9. RCM timer stopped.
10. Automatic operation stopped.
11. Start push button on front panel must be pressed to operate the machine.
    RUN LIGHT ON.

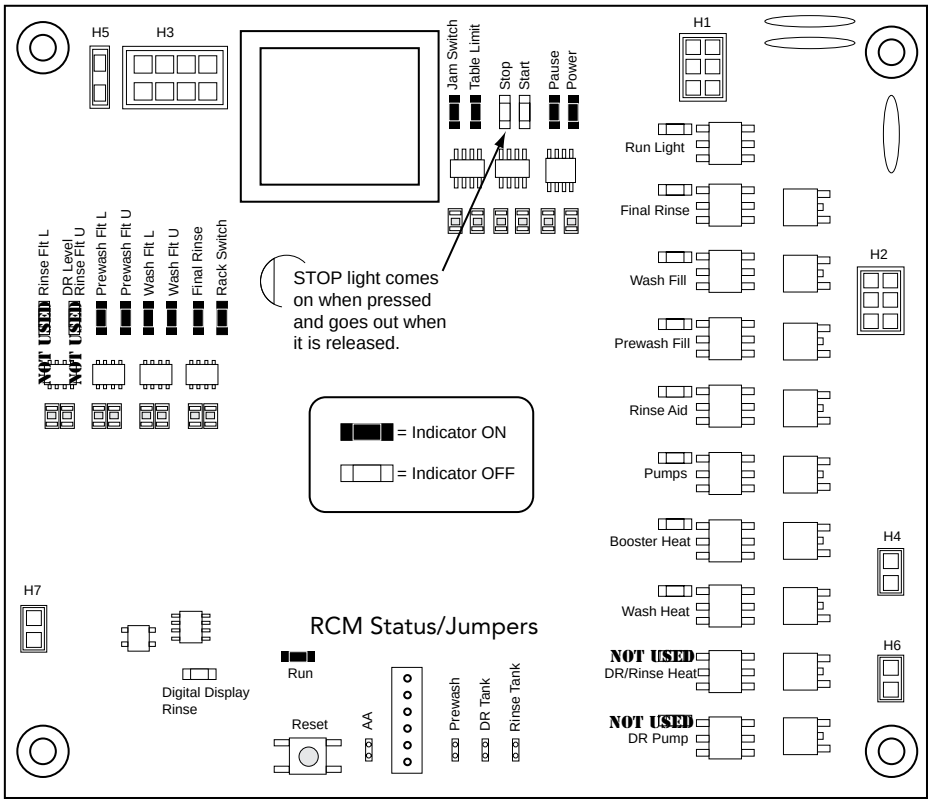


Plate 11:

1. Door closed.
2. POWER light ON.
3. Tanks empty.

ALL FLOATS DOWN

4. Final rinse enabled.
5. Wash fill enabled.
6. Prewash fill enabled MD-66 Only
7. Tank heat disabled.
8. Booster heat disabled.

LOWER FLOATS UP

9. Tank heat enabled.
10. Booster heat enabled.
11. Final rinse, wash fill, prewash fill enabled.

UPPER FLOATS UP

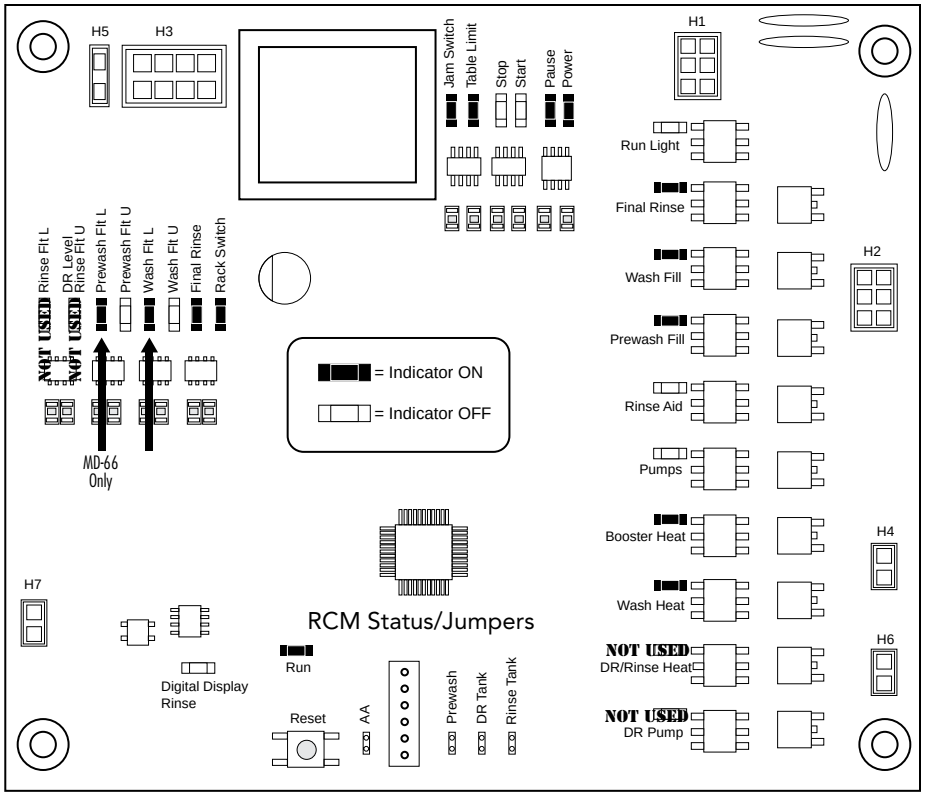
12. Final rinse disabled.
13. Wash fill disabled.
14. Prewash fill disabled. MD-66 Only

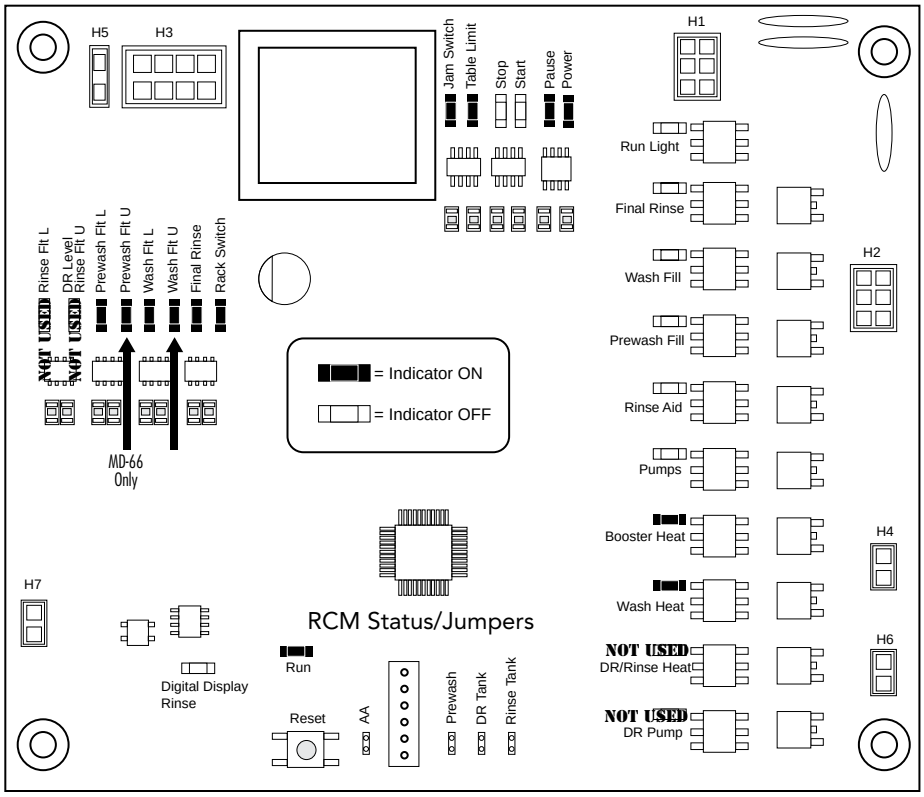
!! IMPORTANT !!

If upper floats do not close within 10 minutes of initial fill, then the machine enters a state of SUSPENDED OPERATION.

The final rinse, wash fill and prewash fill are disabled and the run light on the RCM and the front panel will flash on once per second.

The machine power switch must be turned off and then back on to clear this condition.

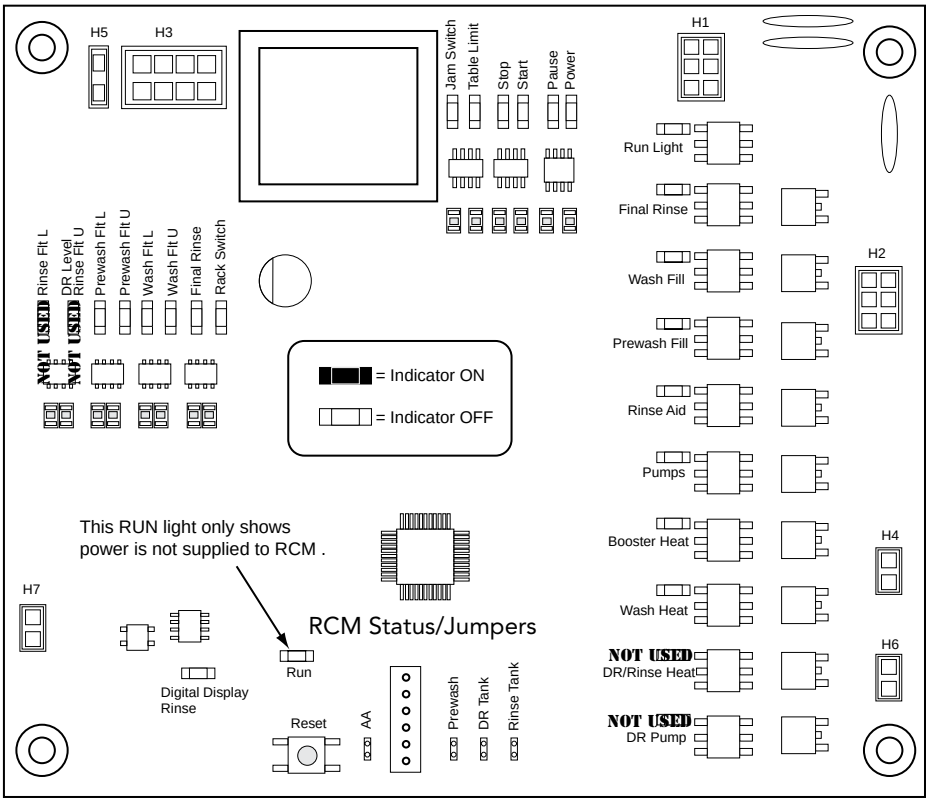




Front Panel Power Switch Turned Off while Dishwasher is In-cycle

Plate 12:

1. Door closed.
2. POWER Switch OFF.
3. Floats up.
4. Tanks full.
5. Tank heat Disabled.
6. Booster heat disabled.
7. Pumps and drive disabled.
8. RUN LIGHT OFF.
9. RCM Status light OFF.
10. All Input and Output lights OFF.

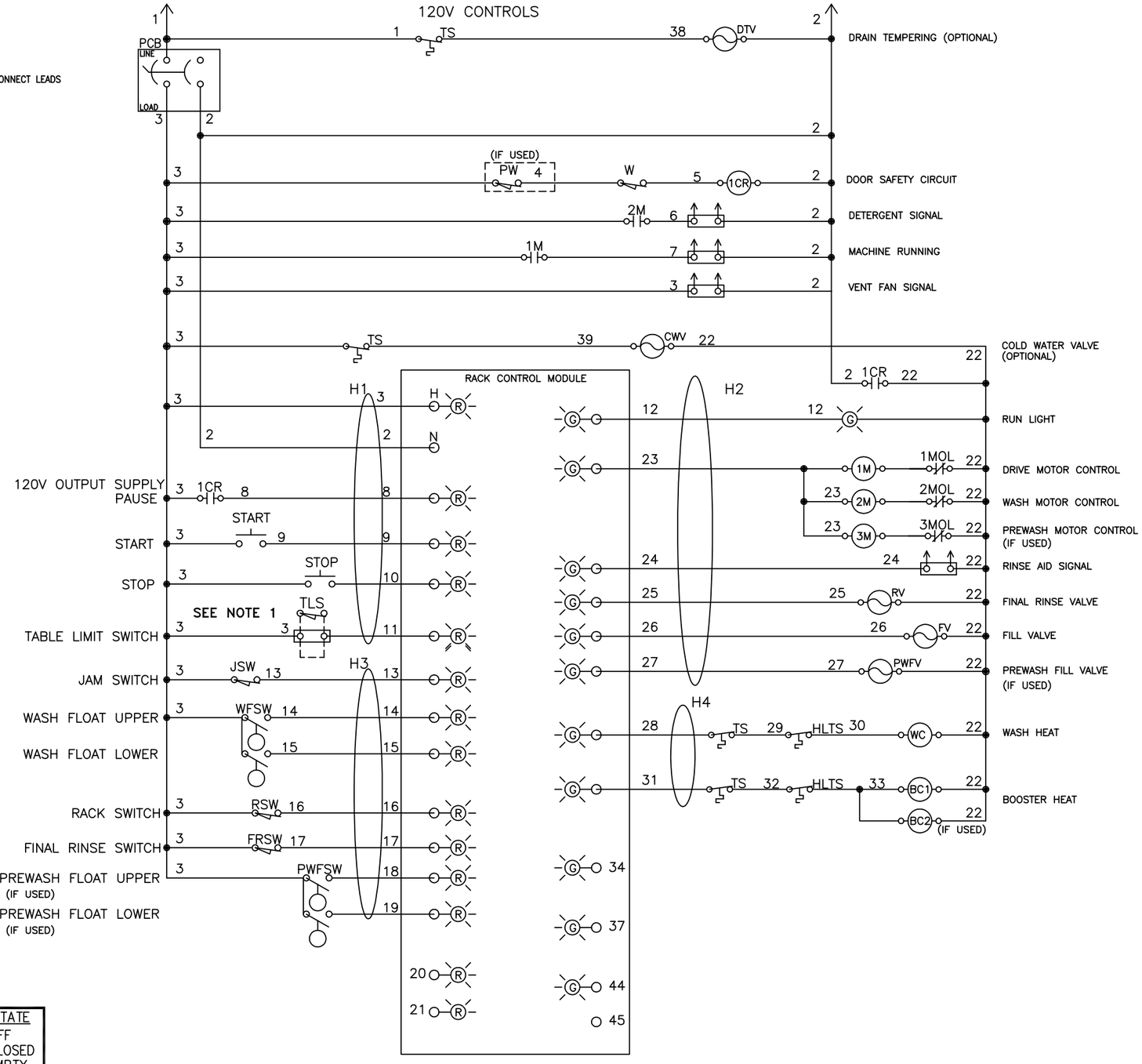


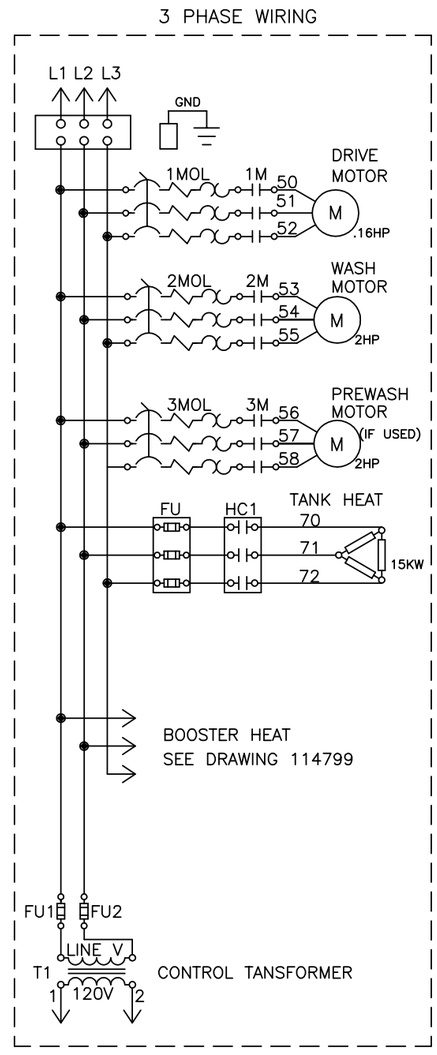
MODELS COVERED BY THIS DRAWING	
MD44, CH44	MD66, CH66

NOTES:

1. WHEN TABLE LIMIT SWITCH IS USED REMOVE JUMPER AND CONNECT LEADS BETWEEN WIRES 3 AND 11 ON TERMINAL BLOCK IN PANEL.

1CR	DOOR SAFETY RELAY
1M	DRIVE MOTOR CONTACTOR
1MOL	DRIVE MOTOR OVERLOAD
2M	PREWASH MOTOR CONTACTOR
2MOL	PREWASH MOTOR OVERLOAD
3M	WASH MOTOR CONTACTOR
3MOL	WASH MOTOR OVERLOAD
BC–	BOOSTER CONTACTOR
CWV	COLD WATER VALVE
DTV	DRAIN TEMPERING VALVE
FRSW	FINAL RINSE SWITCH
FU	FUSE/FUSE BLOCK
FV	FILL VALVE
HLTS	HIGH LIMIT THERMOSTAT
JSW	JAM SWITCH
PCB	POWER SWITCH/CIRCUIT BREAKER
PW	PREWASH DOOR SWITCH
PWFV	PREWASH FILL VALVE
PWFSW	PREWASH TANK FLOAT SWITCH
RSW	RACK SWITCH
RV	RINSE VALVE
T1	CONTROL TRANSFORMER
TLS	TABLE LIMIT SWITCH
TS	THERMOSTAT
W	WASH DOOR SWITCH
WC	WASH HEAT CONTACTOR
WFSW	WASH TANK FLOAT SWITCH





HARNESS ASSEMBLIES
H1 – 6 PIN ALL MODELS
H2 – 6 PIN ALL MODELS
H3 – 8 PIN ALL MODELS
H4 – 2 PIN ALL MODELS

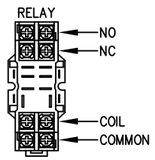


DIAGRAM STATE
POWER OFF
DOORS CLOSED
TANKS EMPTY

Circuit Board Jumper Settings

CH/MD44 = No jumpers installed

CH/MD66 = Prewash jumper installed

DR Tank & Rinse Tank Jumpers not used

CUSTOMER TO SUPPLY RATED VOLTAGE/PHASE/Hz. AS SPECIFIED PER ORDER,TO DISCONNECT SWITCH. ALL POWER SUPPLIED TO EACH CONNECTION POINT MUST COMPLY WITH ALL LOCAL ELECTRIC CODES.

DR.BY	J.MCALLISTER	SCALE	NONE
DATE	03MAY10	SHEET 1 OF 1	

REV.	DESCRIPTION	DATE	BY
A	REVISION FOR RELEASE TO PRODUCTION	3MAY10	JAM
B	MOVED DRAIN TEMPERING VALVE CIRCUIT	4MAY10	JAM

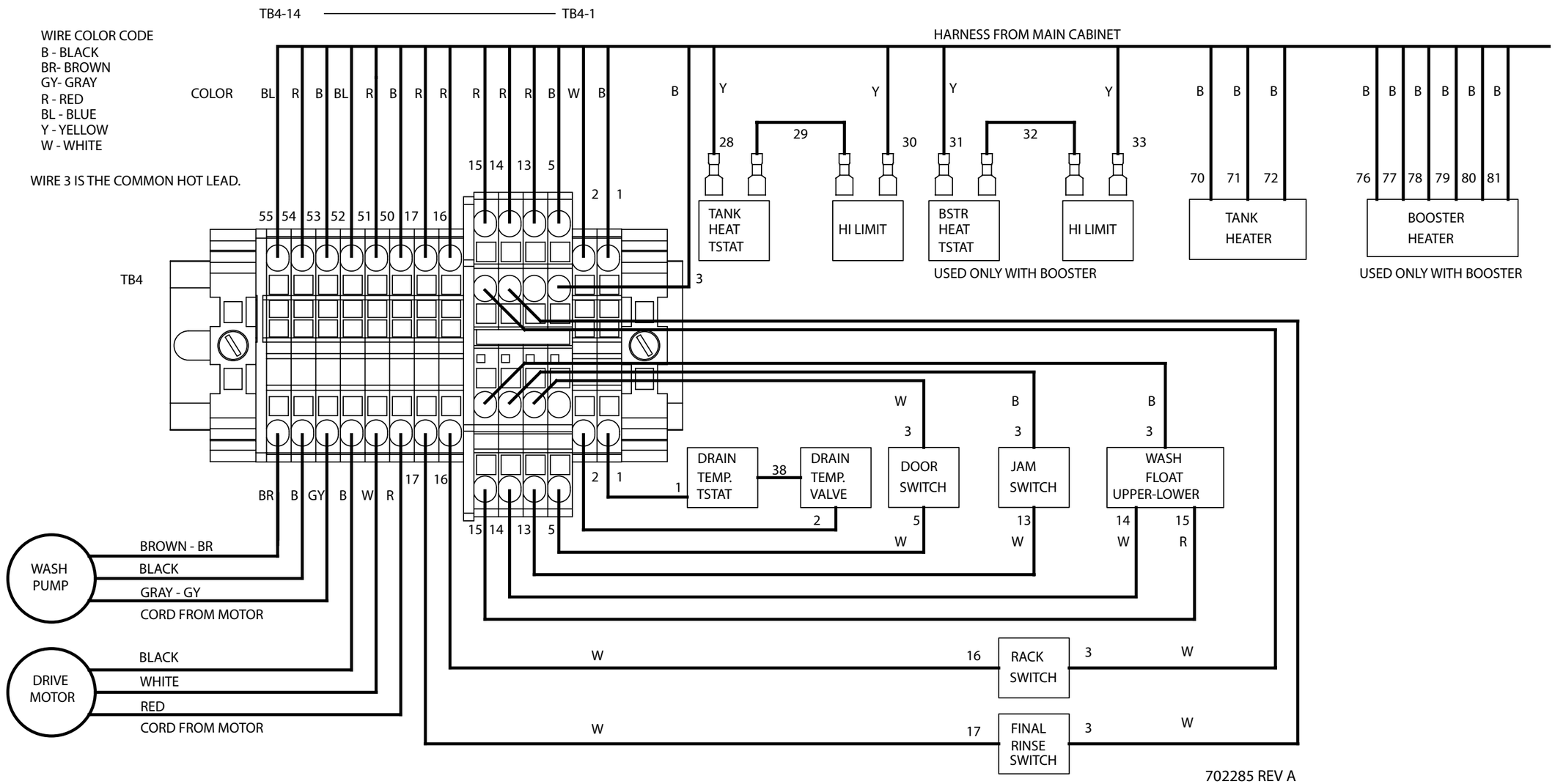
REV.	DESCRIPTION	DATE	BY

Champion
The Dishwashing Machine Specialists

MD44/66 SINGLE TANK RACK
ELECTRIC HEAT PREWASH OPTIONAL

B 702260 REV. B

CH-44/MD-44 JUNCTION BOX WIRING DIAGRAM



CUSTOMER TO SUPPLY RATED VOLTAGE/PHASE/Hz, AS SPECIFIED PER ORDER, TO DISCONNECT SWITCH. ALL POWER SUPPLIED TO EACH CONNECTION POINT MUST COMPLY WITH ALL LOCAL ELECTRIC CODES.			
DR.BY	J.MCALLISTER	SCALE	NONE
DATE	26MAY10	SHEET	1 OF 1

REV.	DESCRIPTION	DATE	BY
A	MOVED DRAIN TEMPERING VALVE CIRCUIT	4MAY10	JAM

REV.	DESCRIPTION	DATE	BY

Champion
The Dishwashing Machine Specialists

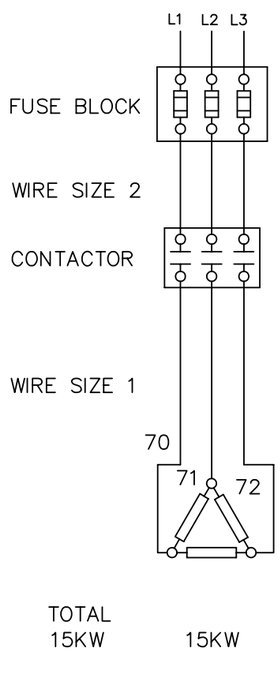
CH-44//MD44
JUNCTION BOX WIRING DIAGRAM

B | 702285 | REV. A **

CH44, MD44, CH66, MD66 Rack Machine Tank and Booster Heater Wiring

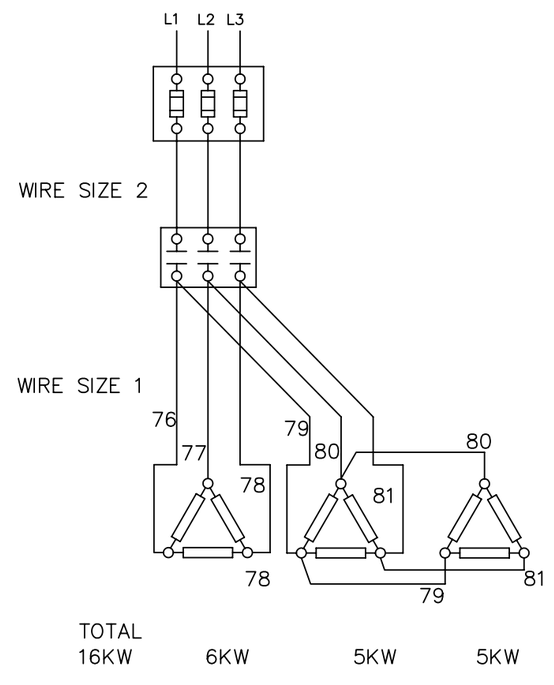
15 KW TANK HEATER

VOLTAGE 200–220V	WASH
KW/CONTACTOR	15KW
CONTACTOR RATING	60A
FUSE RATING	50A
WIRE SIZE	#8
VOLTAGE 230–240V	WASH
KW/CONTACTOR	15KW
CONTACTOR RATING	60A
FUSE RATING	45A
WIRE SIZE	#8
VOLTAGE 460–480V	WASH
KW/CONTACTOR	15KW
CONTACTOR RATING	60A
FUSE RATING	25A
WIRE SIZE	#12



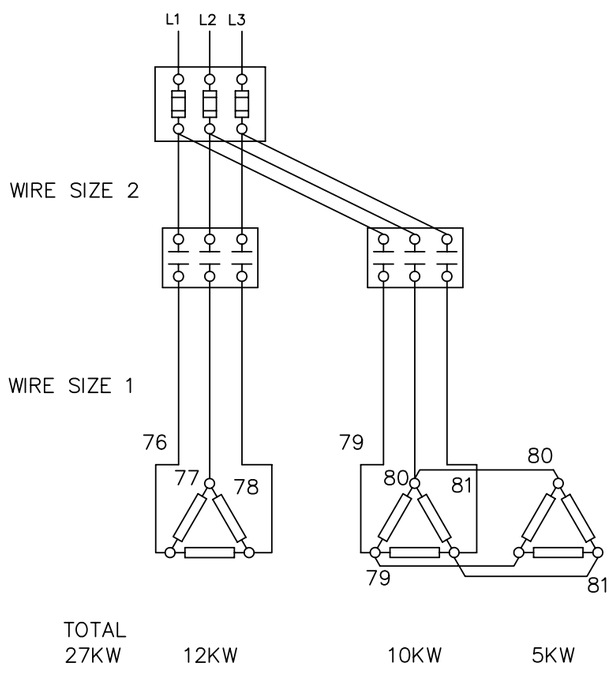
16 KW BOOSTER HEATER

VOLTAGE 208V	DELTA
TOTAL KW	16KW
KW/CONTACTOR	16KW
CONTACTOR #	1
CONTACTOR RATING	60A
WIRE SIZE 1	10
WIRE SIZE 2	8
FUSE RATING	60A
VOLTAGE 240V	DELTA
TOTAL KW	16KW
KW/CONTACTOR	16KW
CONTACTOR #	1
CONTACTOR RATING	60A
WIRE SIZE 1	10
WIRE SIZE 2	8
FUSE RATING	50A
VOLTAGE 480V	DELTA
TOTAL KW	16KW
KW/CONTACTOR	16KW
CONTACTOR #	1
CONTACTOR RATING	60A
WIRE SIZE 1	10
WIRE SIZE 2	8
FUSE RATING	25A



27 KW BOOSTER HEATER

VOLTAGE 208V		DELTA
TOTAL KW	27KW	
KW/CONTACTOR	12KW	15KW
CONTACTOR #	1	2
CONTACTOR RATING	60A	60A
WIRE SIZE 1	8	
WIRE SIZE 2	8	
FUSE RATING	90A	
VOLTAGE 240V		DELTA
TOTAL KW	27KW	
KW/CONTACTOR	12KW	15KW
CONTACTOR #	1	2
CONTACTOR RATING	60A	60A
WIRE SIZE 1	8	
WIRE SIZE 2	8	
FUSE RATING	80A	
VOLTAGE 480V		DELTA
TOTAL KW	27KW	
KW/CONTACTOR	12KW	15W
CONTACTOR #	1	2
CONTACTOR RATING	60A	60A
WIRE SIZE 1	10	
WIRE SIZE 2	10	
FUSE RATING	40A	



PN: 114799_A, Label Schematic P/N 702289

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